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The Unesco Courier

Rivers

A time to live...

Photo © Claude Sauvageot, Paris

17 China **Emperor Sui's Grand Canal**

Opened to navigation by Emperor Sui Yang Di in 610 AD, the spectacular Grand Canal, now fully modernized, constitutes one of China's principal north-south waterways. 1,700 kilometres in length, it links the Beijing region to Hang-Zhou, its southern terminus, in Zhe-Jiang Province, crossing on its way two great rivers, the Huang-He (Yellow River) and the Chang Jiang (Yangtze). Above, the Grand Canal at Wu-Xi, Jiang-Su Province.

The Unesco Courier

A window open on the world

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CHINA: Emperor Sui's Grand Canal

Editorial

WHETHER they bring life like the Nile, or provide succour in the hour of death like the Ganges; whether like the Mississippi or the Yangtze they day-in day-out tax the resources of human ingenuity; whether like the Volga and the Danube they have served as ramparts against invasion; or whether they have kept many of their secrets like the mighty, impetuous Amazon and Congo, the world's great rivers are an essential part of the history of mankind.

In this issue of the Unesco Courier *we have invited writers from different countries to evoke some of these waterways which, in their many-sided roles as providers of sustenance, subjects of myth, arteries of communication, have enabled those living on their banks to broaden their horizons, build civilizations, strengthen their identity. Sacred bonds have been forged with some, like the Ganges; others, like the Danube, have influenced the course of secular history. As for the Amazon, its basin is a natural laboratory which has seen the evolution of countless animal and plant species which man has never fully catalogued and which he owes it to himself to preserve.*

Our cover shows a stream in Martinique, for small streams and mighty rivers share a common fate. What is the message of this rivulet to the Congo, the Amazon, or the Yellow River? What does the rocky trickle say to these great repositories of life?

"Rivers of the world, beware. Fear, as I do, the wantonness of mankind. Yesterday my waters nourished the black fish with flat heads, the fat grey shrimps that are here called native—species that are disappearing or have already vanished. Recklessly used fertilizer, rampant deforestation have sullied my course."

But the damage man has caused, man can repair. Today is no time to weep for the past nor to reject the resources which science and technology offer to the peoples of the world. Our task is to adapt these resources to the real needs of mankind and to foresee catastrophes to which unwise use of these resources may lead. The fate of rivers is inseparable from that of threatened forests, regions of desert encroachment and flooded farmland.

Cover: ***Photo J. Ducange © Agence TOP, Paris.***
Back cover: ***Yemanyá (1982), oil on canvas (1.50 x 1.50 m) by the Uruguayan painter José Gamarra. Photo © All Rights Reserved.***

The moving highways of history

by Eugenio Turri

The Orinoco

Its discharge is so vast that the rapids, whirlpools and eddies which agitate its eternal descent have blended in the unity of a pulse which beats from the dry season to the rains, with the same pauses and paroxysms, since before man came to be.

Alejo Carpentier

IN the cosmogonies of the Ancient World rivers were sacred elements which represented the constant flux of things in the sense understood by Heraclitus. In ancient China they were likened to the dragon, symbol of the cyclical renewal of life. Generally speaking they were regarded as a source of fertility and life, linking the beginning to the end, the principle to the whole, in an eternal and purifying cycle that is also the cycle of the human soul.

In spatial and temporal terms, rivers often exert a dual, contradictory influence over man and his activities: they both fertilize and destroy, attract and repel, unite and divide. The forces they engender are at once beneficial and harmful. But ultimately, as events have shown at different times and places, man is always free to encourage one or the other of these conflicting tendencies by exploiting (or not) the great possibilities which rivers hold for influencing the course of history and organizing geographical areas.

Ever since earliest times, man has been drawn to rivers because they provided water and enabled him to find his bearings. At the dawn of history, it was along rivers that the very first farming communities began to subjugate the land and harness nature. And it was the great rivers of the Ancient World that saw the blossoming of civilizations which changed the course of history—civilizations sometimes known as "river civilizations" because rivers were the decisive factor in their development, just as revolutionary techniques for using other natural elements were decisive in the evolution of other civilizations such as those of Neolithic times, the Bronze Age and the Iron Age.

The great river civilizations, which were economically dependent on irrigated crops and consisted of densely populated, highly urbanized societies, were located on alluvial plains along or between major rivers. Thus the cradles of the Chinese, Indian, Sumerian/Babylonian, and Egyptian civilizations were respectively, the Yellow and Blue Rivers, the Ganges, the Tigris and the Euphrates, and the Nile. How did these rivers contribute to the growth of such homogeneous and enduring forms of human organization?

The French historian Lucien Febvre, who formulated a "historical" and "possibilist" theory of geography, at the beginning of this century applied the notion of the "point d'appui" (literally, "point of support") to define the natural locations in which man settles. These points d'appui included the alluvial plains traversed by the great rivers, the mountains where they have their source, and the coasts where they flow into the sea—in other words, the natural settings which, whether easily habitable or not, attracted man and encouraged him to embark, with varying success, on his historical destiny.

Strictly speaking, the great rivers were the "points d'appui" of other "points d'appui"—the plains themselves—which enabled man to perform outstanding achievements and to embark on the conquest of nature. For if the course of history depended solely on rivers and not on mankind, it would be impossible to explain civilizations such as that of Europe, which became dominant in completely different contexts. It is important to understand exactly what

Photo Georg Gerster © Rapho, Paris

historical and civilizing roles were performed by the great rivers, as well as the limitations of the river civilizations.

The various stages of the development of European civilization took place on the banks of "small" rivers such as the Tiber, the Rhine, the Seine, the Thames, and the Danube; but in order to determine the geographical factors which enabled European civilization to develop steadily, it is necessary to look to other areas of communication than river basins and notably to the seas, or "liquid plains" as they have been called by another modern French historian, Fernand Braudel. First and foremost of these seas is the Mediterranean, where the Europeans founded their earliest cultures, built up a pattern of trade, and began a process of expansion that eventually took them from Mediterranean shores to the Atlantic and the other oceans.

It is easy to see where the river civilizations differed from, say, European civilization. The latter is essentially maritime, coastal, thalassocratic, and outward-looking. The river civilizations, on the other hand, were land-based, agricultural and in all respects dependent on and conditioned by their "liquid road" and its limitations. They never extended their communications network beyond the route traced by the river or beyond the sea into which it flowed. This explains why they became fossilized and were eventually superseded and overwhelmed by civilizations which were more dynamic, more open to the outside world, and not as in their case tied down geographically to a river.

The Indus

For this one boon I thank the heavens [still,
The view of Indus' stream from Mir [Kalán.

Khushâl Khân Khattak

What is true of European civilization is even more valid, although in a different sense, for Arab-Islamic civilization which, enriched by the historical experience and legacy of the river civilizations, developed along universalist lines. It exploited the "solid" overland routes which took its merchants and preachers beyond the desert to the confines of the then penetrable world—the humid equatorial forests.

The British historian Arnold Toynbee explained history and the great waves of civilization through a phenomenon which he called "challenge". In his view man is instinctively urged to construct something new where natural conditions are at their most hostile and put the greatest hindrances in his way. It is by responding to this challenge, which forces him to marshal all his intellectual resources, technical inventiveness and organizational abilities that, according to Toynbee, he becomes increasingly resilient. He saw confirmation for his theory notably in Chinese civilization, which came into being not along the Blue River, which because of the lie of the land flows with relative regularity, but along the dangerous Yellow River, which is beneficial but impetuous (it is represented by the dragon in Chinese mythology) and far more difficult to tame than the Blue River.

After much debate between Marxist and non-Marxist historians, it has been generally agreed that river civilizations like that of Egypt should be classified as socio-historical organizations linked to the "Asiatic production method", so called because its original and most typical forms are found in the river valleys of Asia (in China, India and Indochina). The Asiatic production method springs from the need to carry out major hydraulic constructions such as dykes and canals in order to regulate the flow of the river and use its waters for irrigation. Work on that scale had to be carried out by the community as a whole and required a considerable degree of organization. It had to be placed under the control of a higher authority and governed by appropriate rules, such as those written down in the great Code of Hammurabi in Mesopotamia. According to this interpretation, river societies were bureaucratic and despotic by nature, and obeyed the decisions of a sovereign who acted as a mediator between man and nature (between man and the gods), and who, in his capacity of enforcer of the law of the waters was sometimes in the early period of Chinese history given the title of "Great Engineer".

The Dnepr

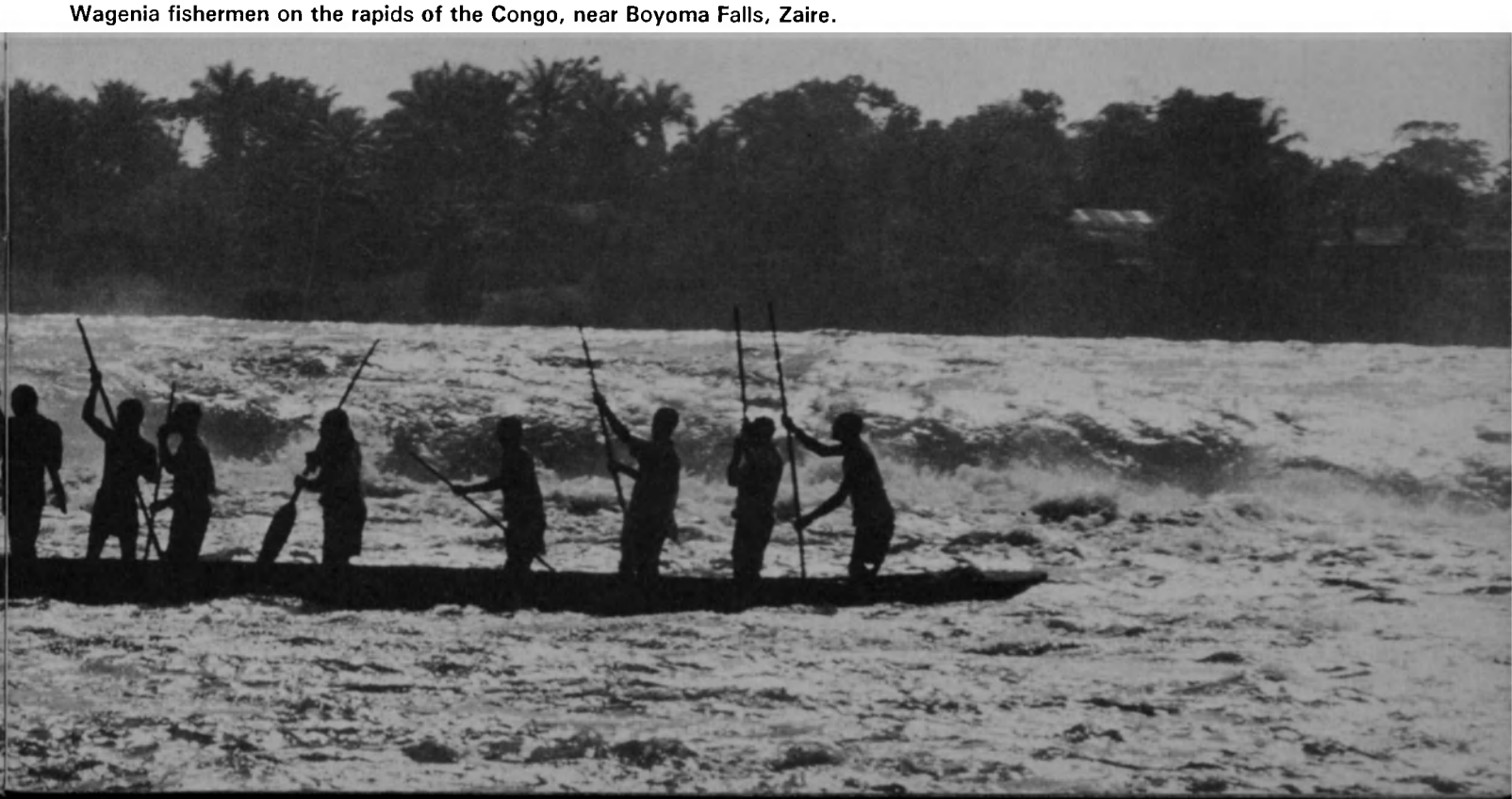
On a fine, calm day, the Dnepr is a wonderful sight as its mighty waters flow serenely and effortlessly between forests and hills.

Nikolai Gogol

But is it true that ancient Egypt exemplifies the Asiatic mode of production? Compared with the enormous efforts needed to harness the great rivers of Asia, especially the Yellow River, the task presented by the Nile was less formidable. After all, greater sacrifices were demanded of the Egyptians during the construction of the tombs, pyramids and other monuments raised to mark an eternity comparable to that of the river. But such massive projects required the same hierarchical organization of society.

A very different role was played by the major rivers of Europe, a continent that has always been politically and hydrologically fragmented. It would perhaps be to take a naively deterministic view of history to argue that the divisions ▶

Wagenia fishermen on the rapids of the Congo, near Boyoma Falls, Zaire.



▶ which continue to be a feature of European history were originally caused by the absence of any truly great river, and in any case Europe has always been outward-looking and attracted by wider horizons. But it is a historical fact that rivers have never been a unifying factor in Europe. The Rhine, which was an artery in the spread of the Roman Empire and of Christianity, and then in the rise of capitalism and industrialization, has always tended to divide rather than unite, even if it now seems to be becoming the axis of a new European unity. The same is true of the Danube, which flows through a mosaic of nations which have never been united and for which the river has never been a factor of mutual understanding.

The Volga is quite different; it is a great river *par excellence*, and also a kind of mother figure *(mat)* in the Russian mind. It has always played a fundamental role in Russian history.

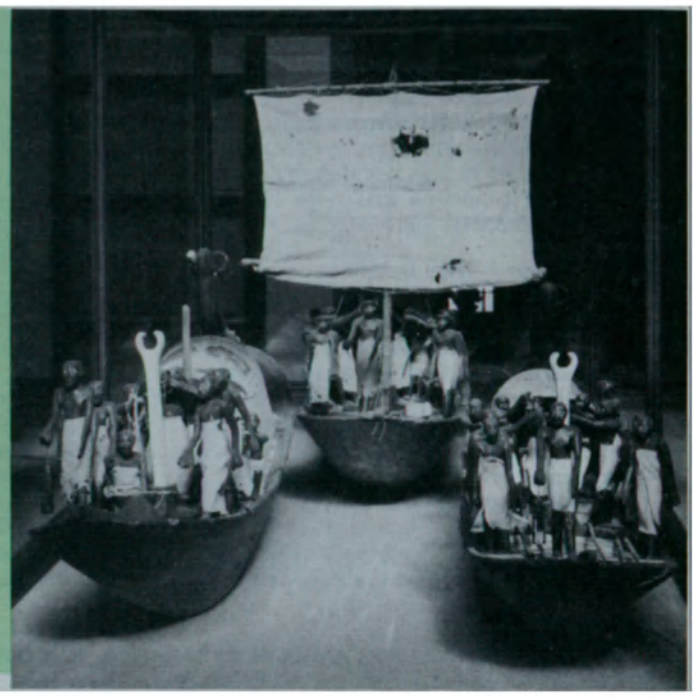
changed more radically over the ages than those of almost any other river.

But to some extent such changes are the lot of all great rivers. After comparable beginnings, they each develop in a way that is strictly governed by the history of the country they water. Although this is perhaps less true of the Nile, it certainly holds good for other great rivers which entered the nexus of modern communications in recent times—those that were exploited during the colonial era, such as the Mississippi, the Congo and the Amazon.

Until then, these rivers had been a life-giving force for local civilizations and a constant presence in the background, but only in an enclosed, self-contained context. As symbols of supernatural forces that could not be controlled by man, they became part of the mythology of the societies that lived on their banks. As such they were respected. Not only did they act as communication routes,

remotest parts of the continent by boat. The colonial powers fully exploited that opportunity to tap the wealth of Africa (Stanley drew attention to the river as an ideal channel by which Europeans could introduce "trade and Christianity" to Africa). The situation has scarcely changed today, and the river still has vast potential as a source of development for equatorial Africa as a whole.

The Amazon has had a similar fate. An exceptional artery of navigation, it too was used as a means of draining the resources of the continent by the groups of adventurers called *bandeirantes* and by the brief incursion of the *seringueiros*, which is commemorated in the midst of the forest by the Europeanized utopian dream of Manaus, built on the plunder of Amazonian wealth. The time has not yet come for the Amazon, either, to play a new role in the history of South America, although the relationship between men and river in the region is fundamentally



The Russian world stretched eastwards across the Volga, enfolding the world of the steppes, welding together Europe and Asia, enriching Russian culture with new elements and giving it an extra dimension, an Asiatic or Euro-Asiatic consciousness.

Like all great territorial landmarks, the Volga is a psychological and emotional point of reference for the Russian people. And it is no accident that during World War II their last but impregnable bastion was on the Volga, at the decisive battle of Stalingrad (now Volgograd). That episode brought the river even closer to the hearts of the people, whose love for the wide open spaces is not only reflected emotionally by the Volga but also historically and culturally determined by it, with the result that they have always had a continental rather than a maritime calling. The Volga is also a river whose appearance and function have

they provided a source of food and reassurance. Then, with the advent of colonial expansion, they were used by Europeans as routes by which to penetrate unknown continents—the only practicable routes for groups of men arriving by sea. Thus the Mississippi, even though it flows from north to south and the logical way to explore north America was from east to west, was immediately recognized as the most suitable route inland because it provided direct access to the heart of the continent and its riches. It therefore quickly became a vital axis for the conquest of the country.

The great equatorial rivers such as the Congo and the Amazon were not used in the same way. A natural barrier, the Stanley Falls (now Boyoma Falls), prevented ships coming from the sea from sailing up the Congo. But above these falls, the slow-moving, broad upper Congo made it possible to reach the

different from that which existed in the ancient river civilizations.

Once regarded as a source of fertility, rivers have become resources to be exploited, waterways. Once the leavening agent of civilizations, they now play a more modest role. They no longer motivate the industrialized world, which sees them in purely economic terms as communication routes. And such are the scale and nature of communications in the modern world that even the biggest rivers, even those which are most important for trade, have ceased to be vital "points d'appui". Today the natural order that once prevailed seems to be the victim of an inexorable process of disintegration. Even as myths, the great rivers have had their day, though they can still excite the passions of those who live on their banks. To this extent they have retained a human dimension.

■ **Eugenio Turri**

In ancient China rivers were associated with dragons, the symbol of the cyclical renewal of life. Far left, three dragons form the motif of this stoneware bowl dating from the Sung dynasty (10th to 13th century).

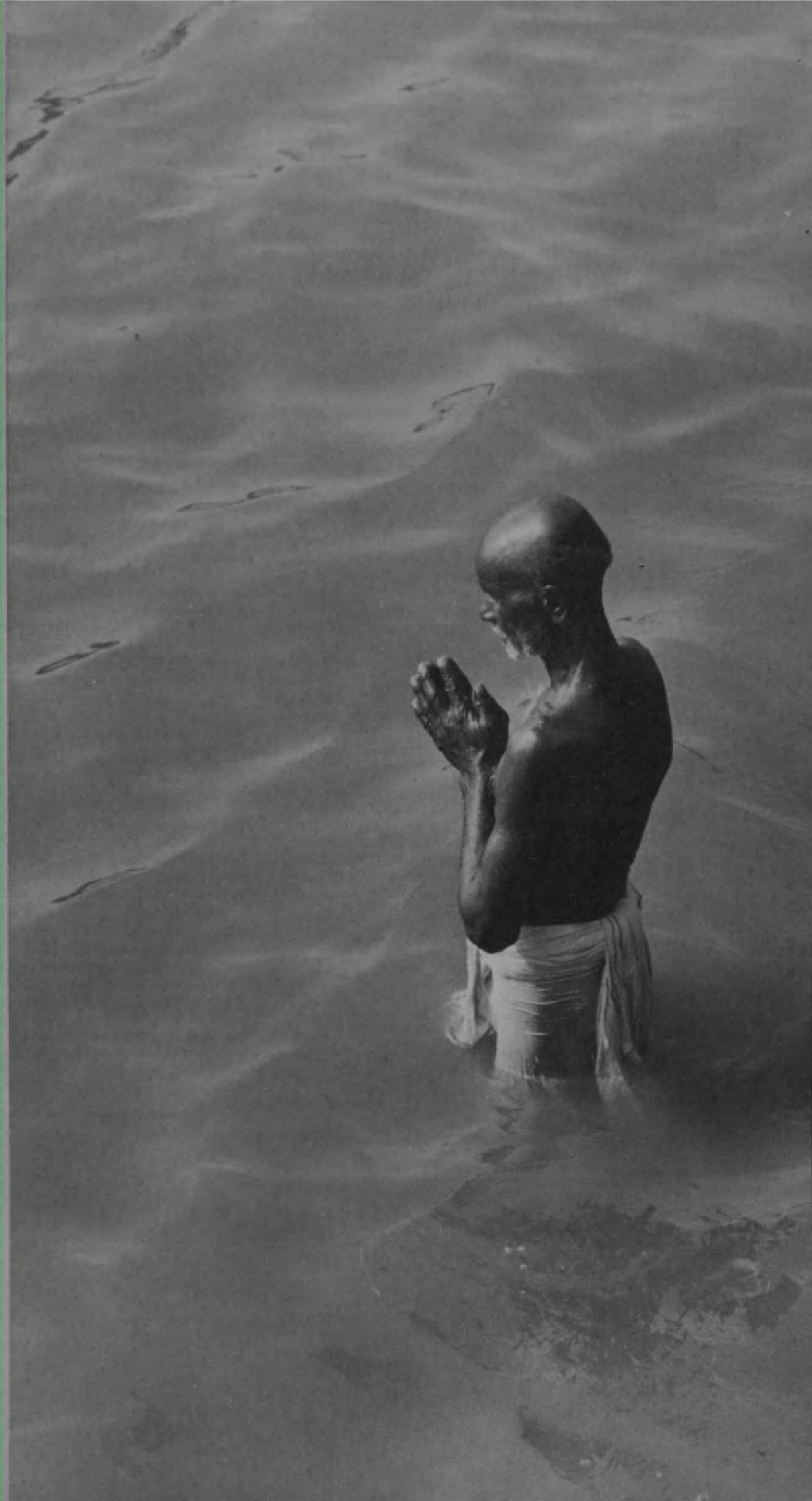
Photo © The Metropolitan Museum of Art, New York. Rogers Fund.

Left, these models of boats on the Nile in ancient Egypt were found at Dayr al-Bahri, near Thebes, in the tomb of Meketer, a minister of one of the last kings of the XIth dynasty of the Middle Kingdom era (2040-1710 BC).

Photo © Hassia, Paris

The sacred Hindu city of Varanasi is situated on the left bank of the Ganga (Ganges) in Uttar Pradesh State, northern India. For centuries pilgrims have come to Varanasi in their thousands to cleanse themselves in the purifying waters of the sacred river.

Photo © Claude Sauvageot, Paris



AMAZON

- Length: 6,280 km.
- Rises in the High Andes and empties into the Atlantic Ocean
- Mean discharge: 180,000 cubic metres per second
- Area of basin: 6,915,000 sq. km.
- It is estimated that the Amazon carries one-fifth of all water that runs off the earth's surface
- It turns the ocean water from salt to brackish for over 160 km. from the shore

Right: Manaus stands on the Rio Negro some 13 km above its confluence with the Amazon. It is one of the most important and modern river ports in South America, but on the outskirts of the city it is still possible to see houses built in traditional style on piles and rafts to protect them from flooding.

Photo André Picou © A A A Photo, Paris

A universe of water

by Thiago de Mello

HIGH among the everlasting snows of the uppermost cordillera, a thin trickle of water suddenly bubbles forth and starts to trace a hesitant line on the age-old surface of the rock. This is where the Amazon is born and, with every instant that passes, is born again and yet again. As it edges its way slowly downwards like a twisting sliver of light, it spreads out and, cutting deep into the greenery, devises a passage for itself and gathers strength. Underground streams emerge and join the torrent flowing down from the Andes. The wind buffets the brilliant white underbelly of the clouds and rain tumbles from the sky. As the streams come together, their combined flow moves ever onward and splits into a myriad waterways irrigating the vast plain crossed by the Equator.

This plain occupies one-twentieth of the land surface of the Earth we live on. It forms a lush equatorial universe covering nine countries of Latin America, almost half the territory of Brazil. Its thousands of rivers and streams represent the world's largest freshwater reserve and form an enchanted labyrinth which is constantly being reshaped as it spreads through the millions of square kilometres of the green land mass.

Situated entirely within the humid tropics, this universe of water is the great Amazon basin, with its dense and intoxicating forest where, ever since the beginning of the Tertiary era, life forms spun from the fabric of the plant world have continued to pulsate over vast areas that have remained untouched and free from the encroachment of man. With so many of its endless expanses untrodden and its true nature unplumbed, Amazonia has yet to be discovered.

Come with me General.
The weather is set fair
and the wind is up.
Gently we glide
as we row in the blackness
of the translucent stream,
taking care not to let
the prow of our craft
cast ripples
on the mirror of the light.

Come discover with me
the green sources of life.

This is the river which Vicente Pinzón saw for the first time in 1500, without realizing that he had left the Atlantic and had ventured into the mouth of a freshwater ocean, at what came to be known as Santa Maria de la Mar Dulce. This was the Amazon whose waters were to be furrowed by the keels of the first sailing-ships, the Parana Guaçu of the Indians living on its banks. The river went by a variety of names:

the Freshwater Sea,
the River Orellana,
Marañón,
the Guinea of the
Arawaks,
Parançu dos Tupis,
Rio de las Amazonas,
the Great River of the
[Amazonas...

Or else, simply the Amazon, the river which stretches for more than six thousand kilometres from the first trickle flowing down from Lake Lauri, Lauricocha, among the summits of the Andes and from Vilcanota, before coming to take shape in the turbulent silt-laden waters of the Urubamba and then going on to join the Ucayali and swell the Solimoes as it winds through the Peruvian forest. It is under that same name that it enters Brazil and settles into its main stream bed, accompanied by the tree trunks torn from its banks. This is the name it keeps until, in a strange and mysterious region, it meets the jet black waters of the Rio Negro, with which its own silt-charged flow is never destined to blend. Yet it is here that it becomes the Amazon proper, the impulsive river that goes on to carve out the deep straits of Breves before emptying into the Atlantic and pushing back the waters of the ocean for enormous distances.

It is true that the ocean takes its revenge. It gathers its salt-laden strength and comes back in force. Its powerful and deafening rollers, several metres high, overwhelm the river, sweeping aside everything in their path and sinking river craft, whatever their size.

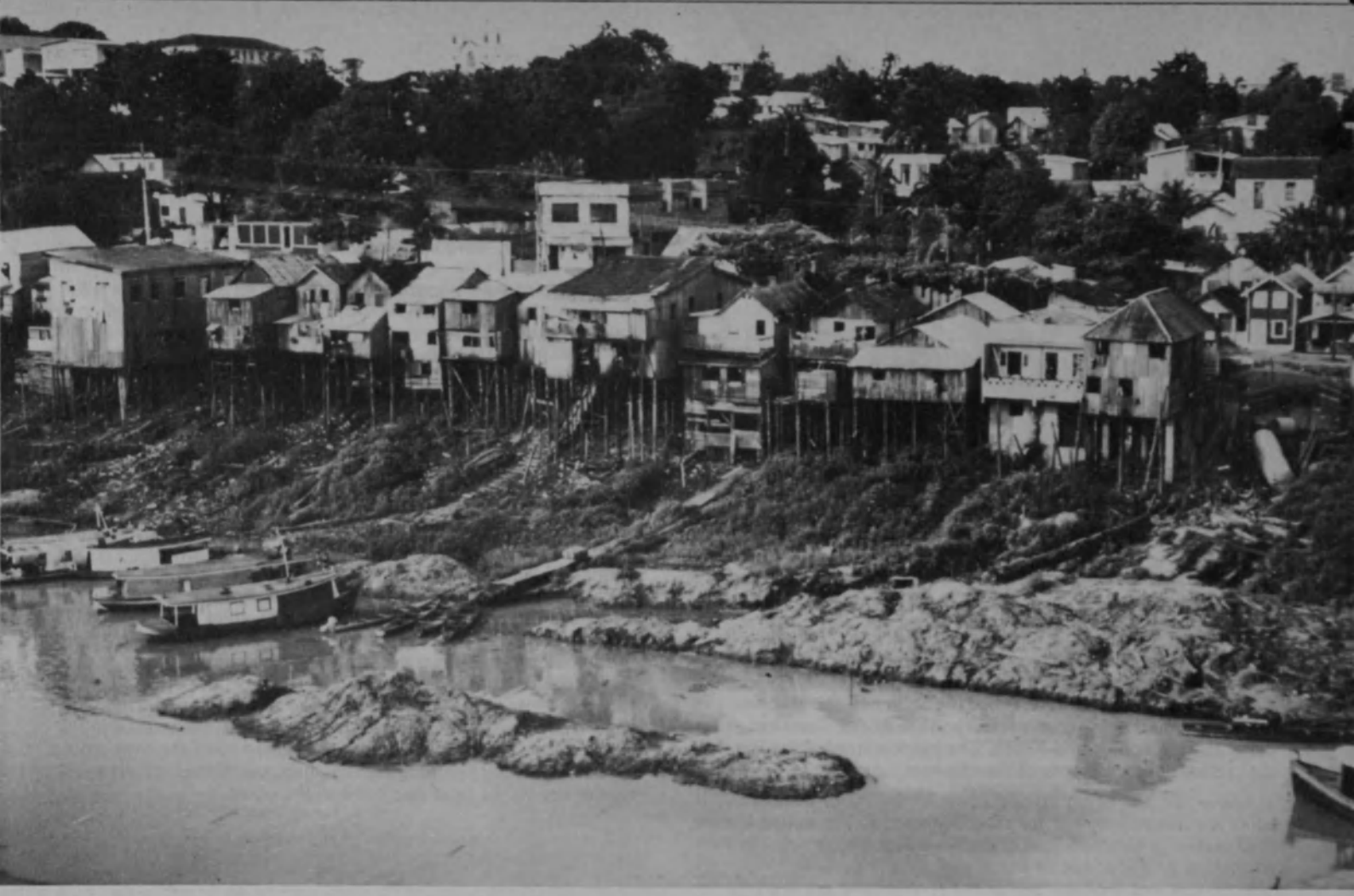
The river never relaxes the law it imposes on man. This is the empire of water. Water that races off in angry eddies, water that tosses obstacles aside, water that laps, water that uproots, water that calls and beckons, water that tumbles over cataracts, water that plunges into whirlpools, water that slowly recedes, water that suddenly peaks in flood, river water that hardly seems to move at all, and becomes dangerous when it harnesses the rising wind and lashes out, water that lies motionless in the silence of the *igapo* (1).

Water occupying deeps of a hundred fathoms or more, where huge blind *piraibas* (2) slowly navigate the silent abyss. Narrow *igarapés* (3), like that of Pucu whose delightful meanders I know so well, never dry up completely and leave their beds exposed, even when the river is at its lowest. Shallow water, transparent or turgid, where the rays scatter very early in the morning. Water at the mouth of lakes or gushing out from springs. Still water: in the Lago Marcelo, beyond the upper reaches of the Parana-mirin-de-Eva, whenever the *uirapururu* sings, the entire forest falls silent, the other birds stop singing, and the water itself is quiet, listening with only a restless quiver from time to time.

Water straddled from bank to bank by tall grasses or covered by undergrowth, with a thick bed of tangled vegetation as the only path. Water bringing diseases; water infected with amoebic ▶

Right, the Amazon near the port of Tabatinga. Photo was taken in the middle of April, the month when streams flowing into the left bank of the river reach their highest point as a result of heavy rainfall in the northern part of the basin. The same phenomenon occurs on the right bank in June.

Photo Giraudon © A A A. Photo, Paris



▶ parasites or blackwater fever. But also well-water: in the humid heat of the forest, thin trickles of cool, thirst-quenching water never run dry. Muddy water in rivers like the Solimoes, the Madeira, the Jurua and the Purus; blue water like that of the Tocatins; green water in the Tapajoz and Xingu. The black waters of the Rio Andira reflect all the colours of the rainbow.

I have just journeyed up and down the Solimoes from where it joins the Rio Negro, not far from Manaus, to the wedge-shaped area in Amazonia where Brazil, Peru and Colombia meet. The twin townships of Tabatinga in Brazil and Leticia in Colombia stand side-by-side and look out across the river on the small and long-suffering settlement of Ramon Castilla in Peru on the other bank, which has already been devastated eleven times by the havoc wrought by the river as it washed away all the fertile land. I spent day after day travelling in a small craft with its engine amidships. It was at the time of the year when the river was rising—the ***enchente****, when the swollen river had burst its banks and flooded the low-lying areas, uprooting trees and carrying away the paltry dwellings. I spent hour after hour on the river without meeting a living soul. Then, suddenly, a skein of white cranes flew past, outlined against the transparent background of the evening, and immediately thereafter, in a bend in the river along the bankside, I perceived a small canoe hollowed out of the trunk of the* ***itauba*** *tree. Standing in the prow was a* ***caboclo*** *(4) making signs with his oar, as if he were calling for help. He was a fine figure of a man, with a radiant expression, but he was bowed down with grief, for one of his young children had just died, carried off by fever, with no one to help.*

The waters of the Amazon go through an endless cycle, starting with the time known as the "first waters", when the river starts showing signs of wanting to rise, followed by the full flood, the *enchente*, and then the falling flood, or *vazante*. It is this ebbing and flowing of the river which governs and transforms the lives of people living in the Amazon basin from one season to the next. Everywhere in Amazonia, not only deep in the forest or along the water's edge but in settlements and urban centres, man feels the beneficial or adverse impact of the rising and falling of the river, in his home, in his food, in his daily labour.

The fluctuating pattern of the river is a constant in the decisions people make in organizing their lives since it is also bound up with economic cycles. If there is a sharp fall in river level, the harvest will be plentiful, since the inundated low-lying areas will have been made very fertile by the mineral salts and organic matter brought down by the river. This is the season for fishing, and a good time to plant. By contrast, heavy floods mean disaster and suffering: the fish hide in stagnant pools that can only be reached through forest trails, crops are destroyed, livestock have to be driven to higher ground or herded quickly into the *maromba*, a kind of narrow enclosure standing on stilts, where they are liable to attack by *sucuruji* snakes; the lower parts of the houses remain under water, and the snakes come and threaten the domestic animals.

Man is at the mercy of the river, but he does not lose heart. He waits for the waters to recede and hopes to make the most of the land enriched by flooding. The river dictates his behaviour and he is always at the river's beck and call. If he fails to comply, he is condemned.

I come from that generous land
where the men born of its lushness
remain captive and forgotten.
And yet they are the brothers
of those resourceful and changeless elements:
water, wind and hope.
Come with me
and learn about the river and its laws.
Come with me
and learn the science of the whirlpool.
Come and listen to the birds of the night
in the magical silence of the ***igapo****,*
draped in emerald stars.

Whereas in Genesis it was the countenance of God, today it is hope that shines on the waters of my river. In spite of all the exactions: the destruction, the plundering of its wealth, the unbridled deforestation, its fauna in jeopardy and, above all, the dire poverty of its riverside populations, hope still exists in Amazonia. There is no end to man's courage. But our main fear is that the forest is starting to tire of being ill-treated to the extent it has been.

Rainfall is a regular feature of the virgin forest, not only during the winter months when the rain falls in solid sheets for days without ever letting up. Even in summer, which is supposed to be the dry season, the rain never stops. All of a sudden, the large pot-bellied clouds lumber into motion, turn black and break up. The cloudburst sweeps down and the Amazonian storm and wind blow in gusts. Such downpours can occur in the early morning or in the middle of the day or at night, when the darkness of the river crossing is streaked by lightning flashes illuminating the turbulent surface of the waves from one bank to the other.

Above left, a young Yagua Indian from the left bank of the Amazon. The Yagua and other Indian peoples such as the Jivaros and the Zaparos belong to a group of indigenous communities which have remained more or less independent throughout their history.

Photo Jim Holland © Rapho, Paris

The Rio Negro, one of the major tributaries of the Amazon, near the port of Manaus. In some places the dense tropical vegetation makes navigation virtually impossible.

Photo Georg Gerster © Rapho, Paris

It was from a storm of this kind on the Peruvian Solimoes that the Indian Moron and his five-year old son, the *caboclo* Rios and I myself once had a narrow escape. I had been spending the day in a Yagua Indian village talking of one thing or another with a young *tuchaua*, or witchdoctor, who knew a good deal about the datura and other magical plants. Before nightfall, we set off in a canoe fitted with an outboard motor for Choriaco, a small riverside settlement, which we expected to reach in about two hours. It was during the flood season.

We sailed up-river keeping close to the forest-lined bank and were about halfway when the storm broke. From the stern, where he was operating the motor, my Indian friend said quietly: "This is going to be terrible". Close by him, in the bottom of the boat, was his small son, all hunched up against the cold. I can still see myself on the seat, turning round and noticing, before it became completely dark, the brightness of his enormous eyes, intense with fear. Up front, on a narrow seat, shirtless, was the *caboclo* Luis Rios, a native of Choriaco.

We went headlong into the storm without saying a word, bound together in our silence. As the speed of the current increased, the canoe started shaking and reared up on the crest of the wave before falling back with a crash. The rain was lashing against us from all sides. The time soon came when we could see absolutely nothing and were surrounded by darkness. The front of the boat was continually banging against tree trunks and then suddenly there was a thudding sound and the canoe looked as if it was about to capsize. Moron tipped the motor towards him, so that the propeller was out of the water, safe from the risk of damage. Our only help came from the lightning flashes, which split the sky in two. In the fleeting moment of illumination, we could see an enormous trunk, a whole piece of a tree with its branches still green with leaves, bearing down on us. Swiftly and silently, with a flick of the rudder, Moron moved the canoe away from the obstacle.

It was so dark that I could not see my hand a few centimetres away from my face, yet time and again I was certain that the Indian Moron managed to see something of the river and its banks in the midst of the pitch blackness. He was able to see or at least his ears or all his other very keen senses told him that something was coming towards the boat. For instance, he would suddenly bear to the left and then straighten up the craft again by throttling back the motor, while out of his half-open mouth there came a raucous cry, brief but powerful which, as if by a miracle, could be heard above the shrieking and howling of the storm. It was as if he were the kinsman of the river.

The storm abated shortly before we reached Choriaco. I now feel the time has come for me to recount two things that happened that night. First, we had barely entered the approaches to the Parana of Choriaco when we saw several canoes coming in our direction. Their occupants were the men and women of the area. I shall never forget them. They had been expecting us in the early hours of the night but they had realized that, since we were late, we must have been caught in the storm, and they had decided to set out and come to our help. When they saw us, a great prolonged cry of joy went up among them. Second, after the storm was over, the sky lit up with stars—all the stars—which, enormous, began to shine as they floated free and unimpeded in the vast space of the Amazonian night.

■ **Thiago de Mello**

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(1) Igapo: *the Indian word for parts of the forest where the undergrowth is submerged.*

(2) Piraiba: *large Amazonian freshwater fish.*

(3) Igarapé: *literally, the "path of the canoe". By extension, a small tributary or a channel between two islands or two rivers.*

(4) Caboclo: *a Brazilian of mixed Indian and white parentage.*

CONGO

- Length: 4,370 km.
- Rises in the Shaba region of Zaire as the Lualaba River, but its remotest source lies between Lake Tanganyika and Lake Malawi, in Zambia, as the Chambesi river; empties into the Atlantic Ocean
- Mean discharge: 41,000 cubic metres per second
- Area of basin: 3,820,000 sq. km.
- Navigable up to Kisangani
- Also known as the Zaire, a corruption of the African word *nzadi* or *nzari* = river

Waters of life

by Henri Lopes

Photo Georg Gerster © Rapho, Paris

The Wagenia people, who live on the banks of the Congo near Boyoma Falls, are expert and daring fishermen. In the rapids they build ingenious wooden scaffolding structures from which are suspended manœuvrable, cone-shaped fish traps.

I have travelled so much that on occasion I have forgotten the map traced out by glow-worms, the village dance, and even the way of tightening the throat muscles to articulate, the men, the hand, the fire, the drop, the salt and that which burns, on the path from the thighs to the pectorals. But when, in some place or other on this earth, deprived of flamboyant trees and the odour of mangoes, my heart guided my footsteps aimlessly along beaches, questioning the fascinating mystery of the abyss, it was always to you that my thoughts returned.

For do not envy the ocean.

Do you know the River, just up-stream of M'Foa and Kinshasa? When the boat leaves the port and obliquely fends the *fantasia* of foam, its smoke still holds in long suspension the dream of the dreamer who follows it from the quays. It will have disappeared from view before it reaches Nsélé.

If you have never made the pilgrimage to Loango, do not hold out the begging

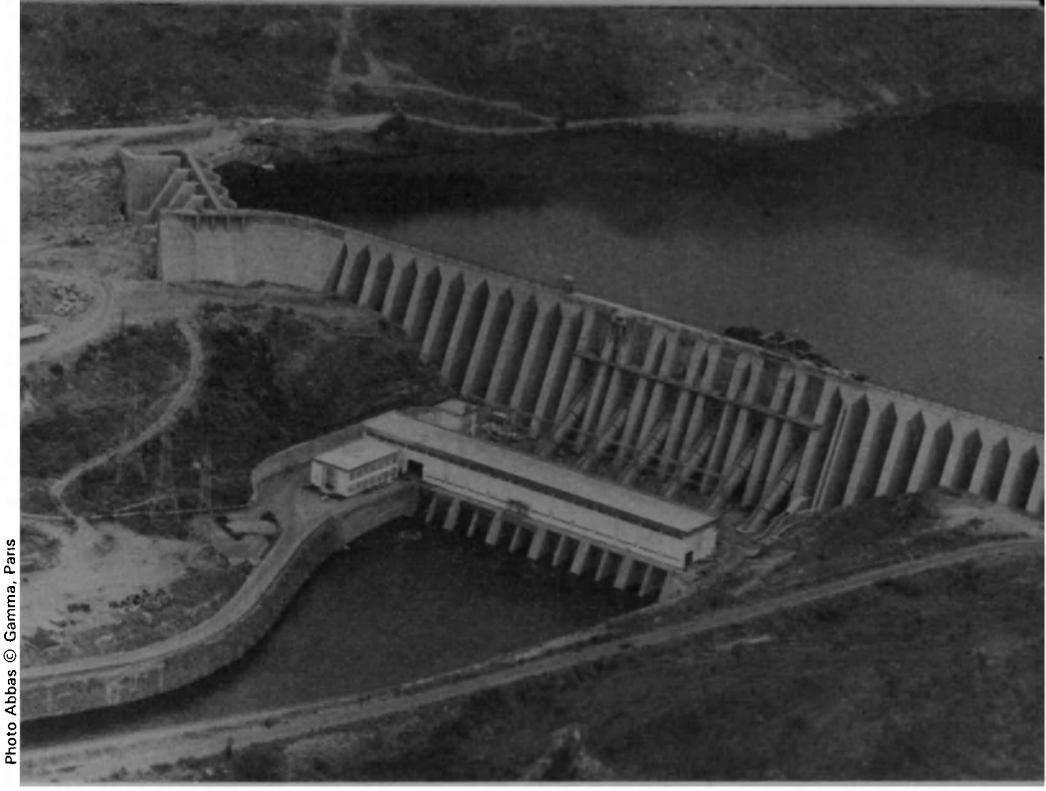


Photo Abbas © Gamma, Paris

Comparatively little of the vast hydroelectric potential of the Congo basin—estimated to be in the region of 130,000,000 kilowatts—has so far been harnessed. Above, the hydroelectric dam at Inga, about 40 kilometres upstream from Matadi, was completed in 1972 with an installed capacity of 300,000 kilowatts. The Inga dam represents only the first phase of a grandiose scheme which, if completed, would make this site the largest hydroelectric complex in the world, with a potential capacity of 30,000,000 kilowatts.

bowl, go up to the plateau at the level of Malébo Pool.

You who hunt or fish by night, whatever your patience, whatever the art of him who weaves your fish traps and nets, there's no point in trying, no trick will surprise the manatees the elders told us of when they taught us about life and about the country.

The river has been emptied. The caymans (or crocodiles, I have never really known which) have fled too. If you still insist on dreaming and on crossing a stretch or two of the spirit kingdom, then open *Ngando**, by the elder Lomani-Tchibamba, the first who wanted to set down the song of the mothers to their sons, the first to say:

"Beware! Don't go to the river. Go straight to school... We have enough water in our well; I will fill you the big pool and you can amuse yourself as you like... Beware, my child, not to the river."

He will also tell you about Ngando eating the child.

He will tell you about Ngando the magnanimous returning his prey.

Ah! Do not say, with a sophisticated scholar's smile, that this is the world of tales, as beautiful as the unreason of styles, but a world which the present age has swept away. The outboard motorboat fends the liquid and my heart breaks. Look at these men of water and nets on M'Bamou Island. And listen to them too. Above all listen to them when the tom-tom throbs to sing the bride and groom, to calm the river's pain, or simply to drive away the mosquitoes. Only yesterday a young man from the city came and, sneering, bathed there. All the arts of the swimming pool at his fingertips.

He went straight to the bottom.

Yes, right before our eyes. Thus lightning puts a stop to all who are oblivious of the oath to the spirits.

Why do you not learn the wisdom of silence and humility? By listening to the leaves of night, they could tell of the adventure that bends Congo.

As for those boats of yours...

Nodules of noise and grease...

The fish have lost their flesh. Nothing but bones, bones, bones!

Pass by, tenacious islets. No one will know the secret of the water hyacinths. Neither the source nor the sky. But where are the canoers with the athletes' voices and the ships with wheels, glow-worms of strange dreams which answered our boyish greetings with the lash of the insults of that time? Oh, you we wished to adore! Even my song of awakening goes astray, caught up in your gluey toils.

There must be a return to the water, to wet the feet there, for the washing of the hands, the face and the mouth. For gargling too, sometimes, so that you can cry until you can cry no more.

These waters gave life.

And like Nzambé, the Father, they took it away, in a sovereign game.

Always by surprise. Such is the rule, without explanation. Traveller deprived of muscled breasts, beware the eyes of our waters. Beware the beauty who glistens as she looks at a sky the colour of a rascally lover. In an overweening desire ▶

Photo © Almasy, Paris

Pile dwellings in the Congo delta.

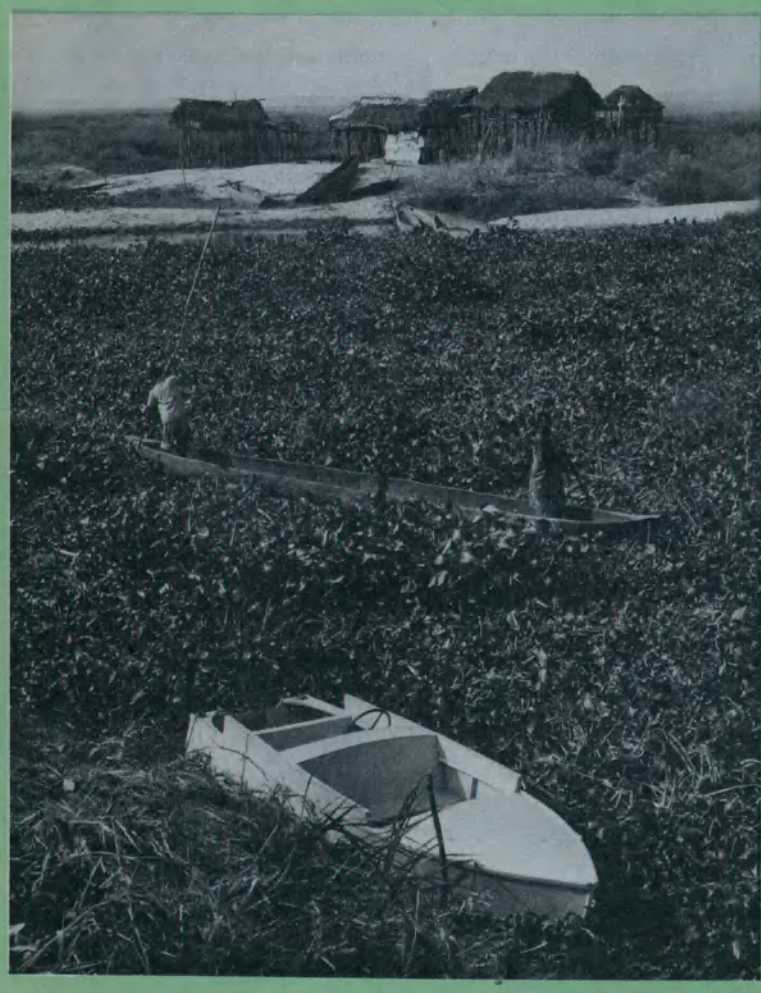


Photo © Almasy, Paris

The Congo waterway system comprises a navigable network totalling some 13,500 kilometres. It carries over two million tons of freight annually despite the many obstructions which hamper passage, not least of which is the proliferation of aquatic vegetation, such as these water hyacinths.

▶ to caress her, a team of canoers smashes like an egg against the rock. They roll, rush and sink in the elements. The faithful women in mourning, on the banks of Kin and M'Foa, still hold their breath, seeking to decode in the howling of the tornado the songs of those who rush towards Djoué. Thus, like the hours, until the *matanga*** of joy.

You would need to go far, far across the seas, impossible now to say how far, beneath a like fiery sky, go to the Amazon, to find such speed, such surging. Power of light or of carcass, whatever you wish, what matter the geographer's figures. It can be sensed.

They came from the summit of the sea. They asked for your papers and we declared Nzadi, Nzadi the River, naturally.

Zaïre repeated their clumsy throats and they wrote it down on their sea-route.

But we do not give in, in spite of the seasons and the centuries. The brothers, over there, only remember two cradles: the other is Guinea. "Si no tienes de Congo, tienes de Carabali"*** chorus the Mambi neighbours.

Congo, then, baptismal fonts notwithstanding.

Diogo Cao died believing that you led to the kingdom of Prester John. We knew better, for once! This meander led only to the court of the Makoko, that one to the court of Mani Kongo.

Who has only one name, when all's said and done? There is the name given at birth. The name given at circumcision. That which is won in combat. That of the enemy. That of the time of the white beard.

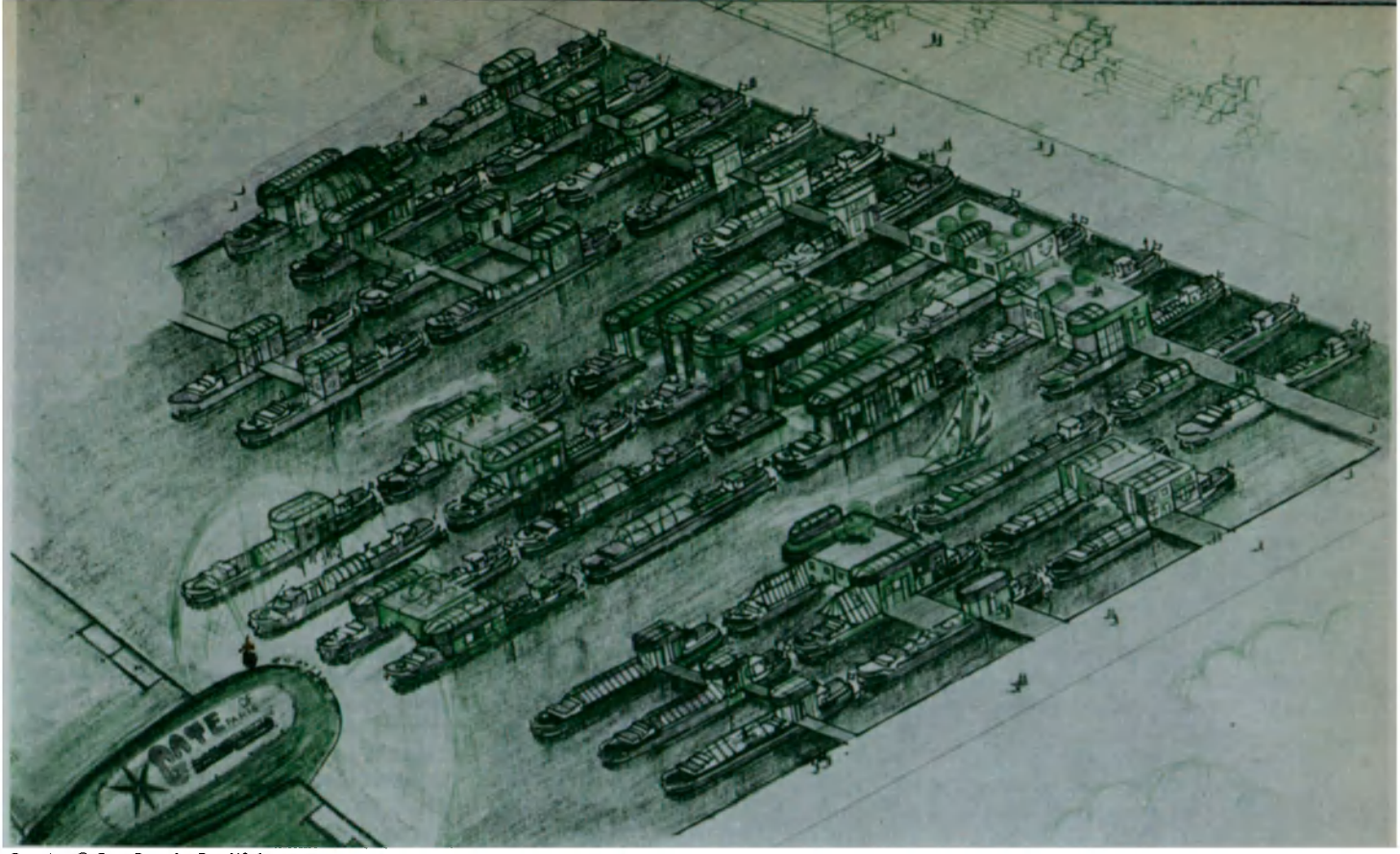
And so it is with you: Oyez for Lukuga, oyez for Ruzizi, oyez for Luapulu, oyez for Luvua, oyez for Lualaba, oyez for the mystery of the heavenly host. And that's only part of the magic. Lake Kivu and Lake Moéro too. Where does the lazy water end, the alphabet of your course? A weakling, at first you do not yet dare run. Who will recognize the tea-coloured youth who rushes headlong, horns foremost, towards Lukoléla, after his marriage with the river of the Sangos? Then, dignified and powerful, His Majesty pursues his course to the Djoué. And here is the inferno where the water can be heard seething, whirling in the dance of the demented, hurled in burning spray above the rocks, stirred up by an unmanageable fire down there beneath the crust. Paralysed and delighted, the indifferent traveller suddenly wants to question the heavens.

Then, Mai-Ndombé, San Antonio, the mouth and the horizon. Weary, your soul at peace, you will stretch yourself out for ever like a combatant, his task accomplished, in the salt of dissolution.

Congo.

■ **Henri Lopes**

* *Literally* Crocodile.
** *A kind of funeral wake.*
*** *"If you're not Congo, you're Carabali"*



Drawing © Gate-Paris for Pier N° 1

Project for a floating village of barges on the New York waterfront.

Barges ahoy!

WITH the growth of awareness over the past decade of the need to husband finite energy resources, there has been a renewal of interest in rivers and waterways as an economical and reliable, if not the most rapid, means of transportation. Locks and waterways have been adapted and improved so as to be able to handle very large barges and storage facilities at riverside ports have been enlarged. One side effect of this has been that a number of the older smaller barges, though still riverworthy, are lying unused because they are no longer economic to run.

However, the construction and technical characteristics of these traditional barges make them easy to convert to a wide range of other purposes. "Pier No. 1", a Paris-based association formed to develop programmes for the conversion and re-utilization of these barges, is now bringing its research to fruition.

The Rhine

It was the voice of the noblest of rivers,
The voice of the free-born Rhine;
To other fields hope guided him, when, high up there,
He bade his kin the Tessin and the Rhone farewell;
Drunk with the taste of travel, eager to depart,
His regal soul to Asia drew him on.

Friedrich Hölderlin

Prompted by Pier No. 1, the New York municipal authorities are studying a project for the creation of a "village" of traditional barges (see drawing), an ensemble of dwellings, craft workshops, cafés, shops, and so on. This operation, which is destined to last for seven years, is aimed at bringing new life to New York's waterfront. The speed with which the village could be assembled and its low capital and maintenance costs offer a rapid answer to the municipal authorities' needs.

Flat-bottomed, forty metres long, five metres wide and four metres high, the traditional barge, dating from the beginning of the century, has all the characteristics necessary for adaptation to multiple uses. The living-quarters, narrow, functional cabins, are situated aft, separated from the hold by the propulsion unit which usually runs on diesel, although gas, petrol or coal-fired engines may be used. Unaffected by the corrosion that plagues marine engines, these units also provide power for other equipment aboard such as lighting and ventilation.

The hold offers a large space easily convertible to any use. Transformed into an audio-visual viewing room, for example, it could comfortably seat eight people. Similarly, if converted for tourist travel, it could house ten cabins approximately the size of a railway sleeping-compartment.

Studies being undertaken for the Government of Colombia show that the hold of a barge converted to hospital purposes could house some thirty beds, whilst the bridge could be used as a reception and outpatient treatment area. Several of these more or less permanently-moored, floating hospital wards could be serviced by a small number of more mobile barges equipped as operating theatres or analytical laboratories on which major surgical operations or medical investigations could be carried out.

This flexible type of organization has much to recommend it, particularly in developing countries where patients often have to make long and arduous journeys to reach the nearest land-based hospital. Mobile riverborne medical units would make it easier to maintain closer contact with larger and often widely dispersed populations and would avoid the much heavier cost of land-based medical centres.

Suitably adapted barges could also help to change the traditional relationship between tourists and tourist centres. Holidaymakers would no longer be obliged to crowd into seaside or country resorts causing seasonal strain on local facilities, encouraging unsightly, unplanned urban development and despoiling beauty spots with their litter.

Large numbers of barges of traditional type are now available on the market. Their rational adaptation and re-use could effectively meet a variety of housing, medical, cultural, communication and leisure needs, at minimum cost while respecting the human and natural environment.

■ **Benoît Delafon**

DANUBE

- **Length: 2,860 km.**
- **Rises in the Black Forest mountains and empties into the Black Sea**
- **Mean discharge: 7,000 cubic metres per second**
- **Area of basin: 817,000 sq. km.**
- **The Danube flows through 8 countries: Austria, Bulgaria, Czechoslovakia, Fed. Rep. of Germany, Hungary, Romania, USSR and Yugoslavia, and is known variously as the Donau, the Duna, the Dunaj, the Dunav, the Dunay and the Dunarea**

Memoirs of Europe's mainstream

by Friedrich Heer

As old as the world, gushing forth from the prehistory of the continent, the Danube is Europe's longest river after the Volga. It was on this waterway which marked the frontier of Latin Europe that the Roman Emperor Marcus Aurelius composed his *Meditations,* a work which would be a source of consolation to later generations of Europeans. But long before then the Danube had been woven into the history of peoples who had crossed it and sailed its length. The *flumen Danubius* of the Romans (who called its lower reaches the Ister), it had previously been the river of the Celts, as indicated by its name which recalls that of a Celtic god.

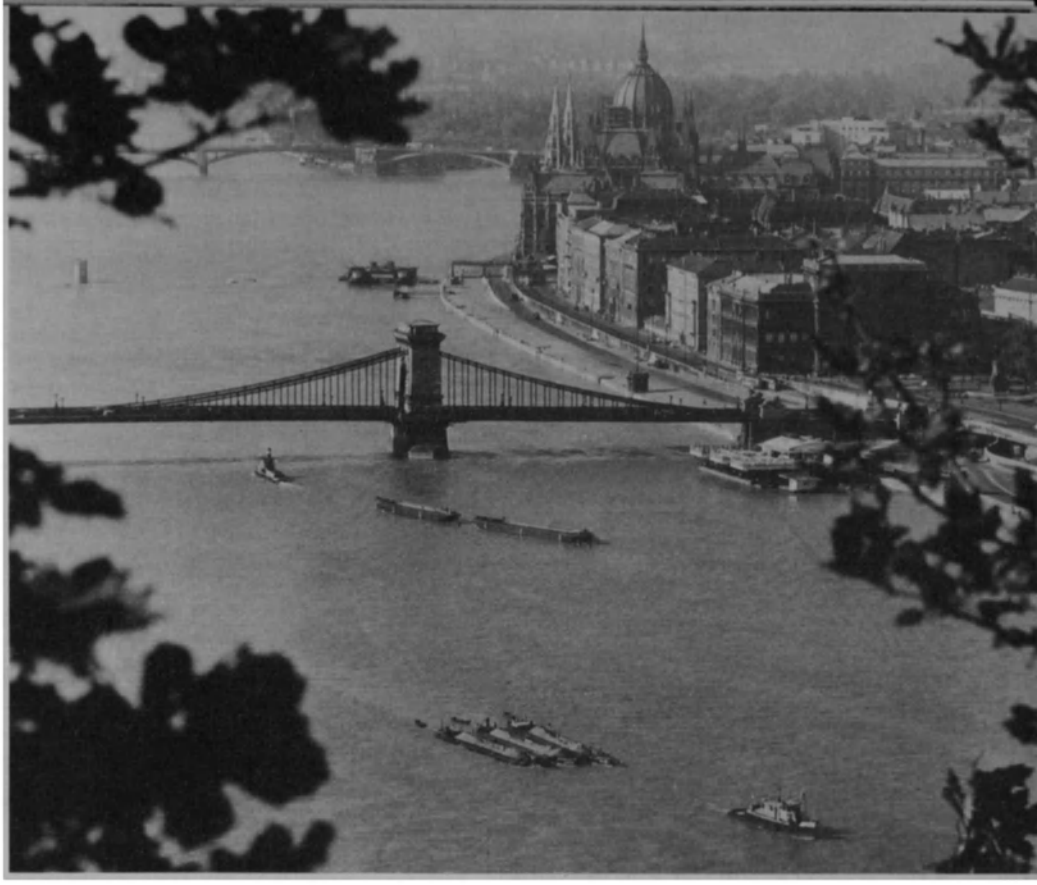
The *Donau* of the Germans and the Austrians, the *Dunaj* of the Slovaks, the *Duna* of the Hungarians, the *Dunav* of the Serbo-Croats, the *Dunarea* of the Romanians, this sombre mother would offer peoples a journey—a journey to life and trade, a journey to war and death. With its abundant fish it gave sustenance to the fishermen who settled on its banks. Some years ago traces of an ancient culture were found on the shores of the Danube in Bulgaria. Strange sculptures depicted gods emerging from the river. Gods of eternal life or gods of death?

Let us briefly follow the course of the Danube from its birth in the mountains until it is engulfed by the sea for, like life itself, it is born, grows, and hastens to its dissolution.

It is in the Black Forest, at Donaueschingen, an attractive town still unspoilt by industrialization, that the river is first called by its name. Here the Brigach, the Breg and another stream unite. Not yet laden with history and ships, it flows smoothly and slowly, a small river that will grow into a great one.

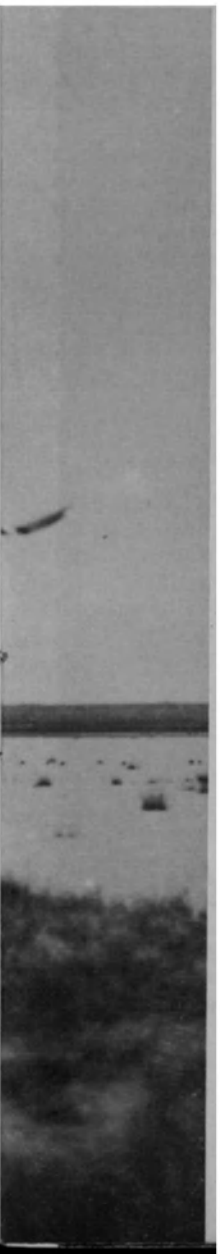
At Ulm the Danube becomes navigable. For centuries, from the Middle Ages onwards, flat-bottomed, shallow-draught boats known as "Ulm boxes" plied between Ulm and Vienna. The Ulm Münster, one of the loveliest German gothic towers, which still delights the traveller's eye, is an *opus Francigenum,* for it was the French who created Gothic and introduced it to Europe. At Ulm, too, there are echoes of Descartes. It was here that the French philosopher, who served as an officer in the Imperial army, dreamed the great dream of Reason, clear, alert and intransigent, which would earn him a place in the history of universal thought.

Now the Danube threads its way through rocks towards Sigmaringen. The fortress of Sigmaringen is still inhabited by descendants of the Hohenzollern-Sigmaringen whose ancestors set out from Nuremberg, riding as far as Brandenburg, and Prussia where they became masters of a State which now no longer exists.



Above right, the Danube at Budapest. View of the left bank of the river showing the dome of the Parliament building and the town of Pest. In the background, behind the second bridge, can be seen Margaret Island.

Photo © Almasy, Paris



The plant and animal life of the Danube delta, a large area of which was designated as a nature reserve in 1962, is unique in Europe. The many varieties of birds to be found there include Europe's largest concentration of white pelicans *(Pelecanus onocrotalus).*

Photo Cordier © Pitch, Paris

The first great city through which the Danube flows is Regensburg—a city of great beauty (especially its centre). In the Middle Ages it was already a town of importance whose missionaries and merchants found their way to eastern Europe. It is a city of old churches, venerable patrician houses, old inns that serve fine food and wines. Here in its upper course the Danube is swollen by tributaries bringing melted snows from the Alps—the Iller, then the Isar, the Bavarian river that flows through Munich.

Then comes Passau, today on the border between the Federal Republic of Germany and Austria. Here, in the "town of fat priests", in the sumptuous chapter-house of the cathedral, the son of the customs officer Alois Hitler received his first youthful impressions. His name is marked indelibly on the memories of those who survived the great massacre he unleashed on Europe.

No, the Danube is not harmless, just as the great current of European history is not harmless. For centuries a deadly whirlpool caused by the wrecks of countless ships which sank after running on to a treacherous reef brought terror to the stretch of the river between Linz and Passau. A stream of death, a journey to death, a journey to the dark east.

The medieval German epic *The Song of the Niebelung,* which was written near the Danube, evokes journeys in the dawn of Latin western Europe, and sings of the fatal journey to Etzel-Attila, king of the Huns, the husband of Siegfried's widow Kriemhild. She leads her people to death, the monstrous revenge of a monstrous woman. Because the churchman who accompanies them on their journey down the Danube foretells the fate which awaits them, Hagen, Siegfried's murderer, casts him in the river. Thus he suffers the fate of a Cassandra, here dressed in ecclesiastical robes, on the eve of the Middle Ages during which pagan survivals fused with a touch of Christianity, a Christianity of the sword, Christianity as it was understood by the men and women of those times. Like the Spanish poem *El Cid* and the French *Chanson de Roland,* the *Song of the Niebelung* was also destined to awaken a national consciousness.

The Mekong

In the clear blue waters
The mirror image of the coconut palms
From the sea the steady susurration
Of waves that rock
Like the hammock of my infant days

Giang Nam

After Linz, the Danube flows through the Wachau, its most romantic stretch. In this land of ancient culture, it passes by ruined castles and sunny slopes covered by vineyards. It flows by Willendorf, site of the discovery of the "Willendorf Venus", a prehistoric statuette of a mother-goddess venerated for thousands of years throughout Europe and even further east. Strindberg once stayed in this district, and long before him, at the time of the Crusades, Richard the Lionheart was held prisoner in a castle near Krems, a town once bigger than Vienna, which still jealously guards its old centre. On his way back from the Crusade, Richard was seized at Schwechat, outside Vienna, and placed in the custody of the Austrian Duke of Babenberg. The bard Blondel sang the praises of his master Richard Cœur-de-Lion, the king of England who spoke ▶

▶ barely a word of English. That a valiant knight, a subject of dispute between Crusaders (when have there not been disputes, quarrels and wars between our fathers and our ancestors?) should be taken prisoner on his return from the Crusade, then constituted a European affair of state, a "scandal".

The Duke of Babenberg handed over the King of England to the Emperor against payment of a heavy ransom. It would have been better for Richard had he remained in the Wachau, drinking good wine and enjoying the Danube sun. English lords offered considerable sums to the Emperor to obtain their king's release.

The Zambezi

The quivering waters of the Zambezi
[river
Will bear on a silvery blanket your name
Leading it to the echoing of the sea.

Mazisi Kunene

Now, for the first time, the Danube traverses open country. This is Moravia, often a battle ground until Napoleonic times. It was here, close to the Danube and to Vienna, that the House of Austria was born on a battlefield. It was also in a castle near the Danube and Vienna that Charles, the last Habsburg Emperor, ended his days as Regent.

Vienna, the *Vindobona* of the Romans, lay on the *limes* or fortified frontier of the Roman Empire which linked the Rhine and the Danube. The *limes* separated Roman Europe from the Europe of the Others, the "barbarians", the peoples who finally struck deep into the declining Empire, crossing the Danube and driving their way to Byzantium, Constantinople, the golden city of the Eastern Roman Empire. And to Rome. Migrations of peoples have continued into our own times, into the age of the two world wars, which were initially and essentially fratricidal European civil wars.

Vienna does not lie on the blue Danube of Johann Strauss. Here, the river is dark and most often grey. It is much more attractive at Budapest, where it links the two towns of Buda and Pest. Now it becomes a frontier between Czechoslovakia, Austria, and Hungary, between Yugoslavia and Romania, between Romania and the Soviet Union. It becomes the great river of Eastern Europe, enriched by many tributaries—the Tisza, the Sava, the Morava, the Jiu, the Olt, the Dambovitsa, the Siret, the Pruth—and enters the Black Sea through its delta, an island-studded aquatic jungle.

As I look at the Danube from Vienna, I see Soviet cargo ships sailing upstream one after the other, many of which were built at Linz or Klosterneuburg, near the city. All of a sudden, there appears a hovercraft coming from Budapest. It provides the most rapid means of transport between the two cities. Then comes a cargo ship from Yugoslavia—from Belgrade, the "white city" that was the scene of battles down the centuries, against the Turks, the Hungarians, the Germans, the Austrians, even during two world wars.

Much blood has flowed down the Danube, but today the river flows peacefully through Western and Eastern Europe, a link, a living bridge, between the two fragments of our continent. As I write these lines, tourists wave to me in friendship from the deck of their ship bound for the Black Sea.

■ **Friedrich Heer**

Photo Cordier © Pitch, Paris

View of the Sulina channel, the only one of the three channels into which the Danube splits at its delta that is navigable. Owing to the large quantity of silt deposited by the River, the delta is extending seawards at a rate of some 30 metres annually.

Colour pages

Page 19

"The Mississippi is like that great serpent destroying the house of Laocoön."
Throughout its lower reaches the Mississippi meanders like a writhing snake through a broad fertile valley, leaving behind meander scars, cutoffs and oxbow lakes and changing its length by as much as 80 kilometres a year.

Photo Fred Mayer © Magnum, Paris

Page 20 (top photo)

"The Nile is born in lands whose memory rests only on tradition, and it expires in a land whose memory is monumental."
From Aswan the Nile flows for some 800 kilometres through a valley cut into a limestone plateau whose scarps rise at times to a height of about 500 metres above river level.

Photo Ferier © ANA, Paris

Page 20 (bottom photo)

"Today the Danube flows peacefully through Western and Eastern Europe, a link, a living bridge, between the two fragments of our continent."
Exploitation of reeds in the Danube delta. Reed stems have been harvested for centuries for thatching and construction purposes, for making arrows and pens and for pipes for musical instruments.

Photo Cordier © Pitch, Paris

Page 21

"The Yangtze—the right breast of our mother—has nurtured with her milk the fertile land that makes up more than half the Chinese continent."
Ploughing a paddy field in the valley of the Yangtze near Chong Qing.

Photo © Schulthess, Switzerland

Page 22

"Mother, you who are born of Vishnu's footstep, representing his force and honoured by Him, protect us, and wash the sins we commit from birth to death."
Two Hindu *sadhus* (holy men) meditate near the Gangotri waterfall a few kilometres from Gomukh (the "Cow's Mouth") where the Ganga emerges from the Gangotri glacier.

Photo Raghubir Singh © ANA, Paris

GANGA (Ganges)

- **Length: 2,506 km.**
- **Rises near Gangotri in the Himalayas and empties into the Bay of Bengal**
- **Mean discharge: 38,000 cubic metres per second**
- **Area of basin (Ganges/Brahmaputra): 1,730,000 sq. km.**
- **Main distributaries: the Hooghly and the Meghna**
- **The delta of the Ganga covers an area of some 57,000 sq. km.**

The goddess who came down to earth

by Lokenath Bhattacharya

IT is to be acknowledged in all humility that writing about Ganga, the Ganges as others call her, is an impossibility, since much of the river exists more in the imagination of the people who, verily, are her own children, a repetition of the fallen Vasus of the *Mahabharata,* than in reality. A river is a she, in Sanskrit as well as in French, and maybe in quite a few other languages also. But nowhere is a river *she* with such force and presence as in the case of Ganga.

Ganga is the name of a civilization—in fact, many civilizations. Epochs of history and chronicles of cults and cultures lie dormant in the layers of the soil washed by the waters. Dreams and despair, facts and fiction, creation and devastation, all have been elements in a process which has culminated in the portrayal of her image. In the pantheon of Hindu divinities, especially as an object of popular worship, she occupies a unique position. As the scriptures describe it, her home is among the stars, where the Path of Vishnu lies, between Ursa Major and the Pole Star. "Mother, you who are born of Vishnu's footstep, representing His force and honoured by Him, protect us, and wash the sins we commit from birth to death".

Photo Raghubir Singh © ANA, Paris

According to Hindu scriptures the Ganga (Ganges) the most holy river on earth, was created when the goddess Ganga came down to earth from heaven. In this 19th-century painting she rides a saurian, holding a lotus and a pot of Ganga water.

Like her elder spiritual sister Sarasvati, the legendary river now lost in the desert of time, Ganga too becomes a "mother of the Vedas", and is identified with the Word. She is the pearl of poetry, "engaging herself in grammar, giving pleasure to the ears".

And what hold she has on her devotees!

Three incidents come to my mind. I can't exactly recall if they all happened during the same journey. But all were at Gangotri, the real as well as legendary place not far from the first visible source of the river of the ringing, singing name, the river that is the mother, the goddess, the beloved, the flowing, scintillating life, the life-giving water, the waters of creation.

The first concerns a one-legged youth, ascetic-looking, standing knee-deep in the icy water of the Bhagirathi, very near the bend in front of the Gangotri temple. The month was October, and the time about six o'clock in the morning. A frozen, frost-bitten picture, not only because of the shattering, excruciating cold, but also because of a certain stillness and a timelessness that surrounded the air. Yet the river was anything but motionless, or soundless; its speed had its usual, perpetual ferocity.

The man, though, was as immobile as a photograph. He was, apparently, uttering his sun-prayer, maybe for fifteen or twenty minutes which, to one or two scattered onlookers like us, seemed an eternity.

The greater surprise, however, still awaited us, late in the evening, on the same day. We saw him return to one of the resting houses for the pilgrims where he must have been staying and were told that he was just back from Gomukh, "the cow's mouth", known to be the true source of Ganga, a formidable-looking ice cave at an altitude of over 4,000 metres and twenty-three kilometres beyond the town of Gangotri. That meant for him forty-six kilometres going and coming, on a difficult, makeshift, mountain path which, at places as narrow as sixty centimetres, must entirely be trodden on foot. One-legged; forced to use crutches, how could he make it?

"Everything is possible when the inspiration is *Ganga-mayi* (Mother Ganga), a *sannyasin* [Hindu ascetic] who has his cottage on the right bank of the river flowing downwards at Gangotri told us, referring to such apparently incredible events. The *sannyasin*, who is the object of the second incident I have in mind, was, as subsequently we gathered from others, originally a South Indian and had once served as an engineer in a government public works department. He had renounced the world, as he himself described, "to pursue the course of Mother Ganga and realize her true form". Moving for a considerable time from the plains towards the source of the river he finally settled down near its icy origins high in the Himalayas and now divides his twelve months of the year between Gangotri and Gomukh.

My third incident also concerns a near cripple, a woman of apparently modest means, about 80 years old, bent from the waist like a right angle, because of her age, whom I found walking, crawling almost, with her stick on the perilous path somewhere midway between Gangotri and Gomukh, when I too was alone on my way to Gomukh, my companions having preceded me by perhaps a few hundred metres. The woman was walking firmly though slowly, occasionally stopping for breath and she was moving in the same direction as I was. Uttering the habitual greeting *"Ganga-mayi ki jai"* (glory to Mother Ganga) I tried to overtake her gently and carefully as the path was uneven and narrow with a steep gorge on the right pointing to ▶

▶ the Ganga which was flowing perhaps one hundred and fifty metres below.

The river had a frozen look here and there with occasional tracts of icy roof running to three hundred and fifty metres at a stretch and covering the flow of the river which, beneath the roof and before coming out in the open again, moved incessantly, singingly. The perpetual snowline was still a distance away and we were in the region of scattered birch forests said to be the favourite roaming ground for herds of musk-deer.

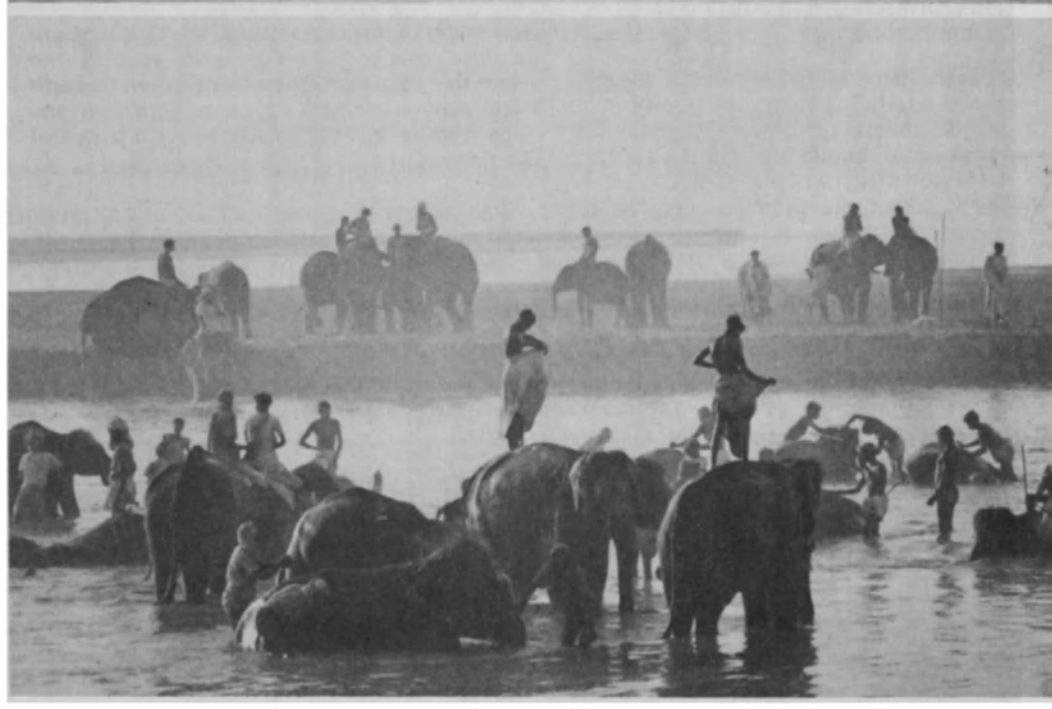
When I was about to overtake her, the woman suddenly turned and asked me in her Hindi, "Son, is this the road to Bhaironghat?". I told her that Bhaironghat lay in the opposite direction and would mean for her four to five hours walk, that the direction she was going would shortly take her to Chirbasa, the last human habitation of two or three huts along the way, before the path merged in the perpetual snow. With a touch of despair in her eyes and voice which still rings in my ears, she cried out, "Oh my God, what I have done? How am I going to return now?" But she regained her composure immediately after and, touching her forehead with folded hands, uttered, *"Ganga-mayi ki jai.* She has brought me here, she will take me there".Then without a word more she turned and started to walk in the opposite direction.

Few rivers anywhere in the world have been elevated to the exalted position Ganga occupies in the vast hymn literature of the Hindus. There is no rite or religious ceremony connected with any important event of a Hindu's life—be it birth, marriage or death—which can be performed without use of her water. She cleanses, purifies; sanctifies. When a Hindu, while bathing, invokes the seven celestial streams from the solar orb ("Make your abode in this water, oh Ganga, oh Yamuna, oh Godavari, oh Saravasti, oh Narmada, Sindhu, Kaveri"), he gives preference to Ganga among all the other ones. Then he immediately proceeds to address her singly in a series of hymns one of which says. "In heaven, firmament and earth, as teaches us Vayu, the god of the wind, are thirty-five million holy places, but all, mother, are comprised in you".

The legend which gives her the name of Tripathaga, "triple flowing", meaning thereby that she runs in heaven, earth and hell, and describes her descent to earth from heaven, has narrative details which explain well the awe the river inspires in the visitors to her source region in the Himalayas. The prayers of

A flotilla of fishing boats at Nimtita in West Bengal.

Photo Raghubir Singh © ANA, Paris



Near Sonepur, the confluence of the Ganga and the Gandak, elephants are bathed during a fair commemorating a fight between Gajendra (lord of elephants) and a huge crocodile. Elephants are associated with rainfall and abundant crops. In Hinduism the elephant-headed god Ganesh is a remover of obstacles and a symbol of prosperity.

Photo Raghubir Singh © ANA, Paris

Hardwar, where the Ganga leaves the mountains and enters the plains, is one of the chief places of pilgrimage for Hindus in India. Multitudes attend great bathing ceremonies, especially the *Kumbh Mela* which is celebrated at Hardwar every 12 years. Left, throng of pilgrims gather to bathe at the *Har-ki-Pairi* ghat where the footprint of Vishnu, who could cross the 7 regions of the Hindu universe in 7 steps, is imprinted on a stone.

Photo Raghubir Singh © ANA, Paris

the saint Bhagiratha, it is said in the legend, brought Ganga down from heaven to purify the remains of the sixty thousand sons of King Sagara who had been reduced to ashes by the infuriated glance of the sage Kapila. Ganga, angry at being brought down, could only be controlled by Siva who saved the earth from the shock of her fall by catching her on his brow and then checking her course with his matted locks.

The vision of the fury of the river interlocked in the tortuous lanes and by-lanes of Himalayan rocks near Gangotri, with the colour of the water as red as blood at places, reminds one of the hymn starting with *bhayanam bhayam bhishanam bhishananam* and saying, "You are the dread of the dreadful, the terror of the terrible, the refuge of all creatures, the purifier of all purifiers. Superior even to the supreme protector of all protectors, you alone rule the high-placed ones".

Depending on her moods and the circumstances, she can be a soothing, gushing, singing or terrorizing beauty.

The descent of Ganga is an elaborate myth which all through the ages has inspired Indian artists and sculptors with a perennially challenging theme. The most dramatic representation of it is, of course, on the well-known granite rock at the deserted seaport town of Mamallapuram near Madras.

Not only the Mother, in which form she is so generally worshipped, Ganga, at times, can also become a most desired woman of ravishing beauty. How can we forget the lovely maiden of blazing splendour she was to King Santanu in the *Mahabharata* when he saw her for the first time, prompting him to address her with these words: "Whoever you may be, of human origin or a goddess, or a daughter of a demon, or belonging to the race of the Gandharvas or Apsaras, or the Yakshas or Nagas, oh you of slender waist and celestial beauty, I want you to be my wife".

In actual fact, originating in the Himalayas and emptying into the Bay of Bengal, the river covers a distance of 2,506 kilometres, which, we are told, makes it the fifteenth largest among Asian rivers and the world's thirty-ninth largest river. The tract of territory it passes through is one of the most fertile and densely populated in the world. It has also been the cradle of Hindusthan and Hindu civilization.

At places, especially in the West Bengal region, the course of the river is sluggish and is often described as dead or dying. And despite the traditional purity attached to the quality of its water, in most areas of the Gangetic plain it is an increasingly and dangerously polluted river. Even the great Akbar, the Moghul emperor, as recorded by the sixteenth-century chronicler Abul Fazl, used to call the river "the source of life", because of its "water of immortality" which, both at home and on his travels, he was accustomed to drink. Alas, those days of the purity of its water are long past. But how many times must humanity ask itself the question: what is more real in life, the reality, or imagination? In the case of Ganga at least, the answer to that question is: imagination.

In conclusion, here is one last picture of a last act of life. My grandfather, a pious brahmin and scholar, was dying at the age of 76. I was then about eight or nine years old. The scene was our native town some thirty kilometres north of Calcutta. Ganga flows by the town where, during the daily high tide, she is one and a half kilometres wide. Following the custom, my grandfather who had been ailing for quite some time was brought near the bank of the river three days before, in fearful expectation that he might expire at any moment.

He was lodged in a large, bare room made specially for the purpose and attached to one of the bathing *ghats* (temple). The whole family, along with him, had shifted to the room not only to nurse him and be with him in his last moments but, equally importantly, to take him, when the situation so warranted, hurriedly to the river just before he expired.

But the last moment did not come. There was even talk of taking him back to our ancestral home. As he was still very conscious, the prospect of having to die without the touch of the flowing Ganga made him suffer all the more. Agony was writ large on his face.

And then all of a sudden it happened. Holding precariously the still living body of grandfather, my father and two uncles rushed down the steps of the bathing *ghat* and reached the river. Soon the lower part of the body lay immersed in the water while its upper part, kept above the water, was held by my father who was also putting drops of Ganga water into grandfather's mouth with the faint utterance "Om Ganga, Om Ganga, Om Ganga".

The time might have been a few minutes past sunset. The skyline on the other shore, with the silhouette of a tall temple, looked a battleground pink with the blood of slain heroes.

"Om Ganga, Om Ganga, Om Ganga".

Then the agony changed into ecstasy and the light went out for ever. The face of the dead man, though battered due to long illness, spoke of a sudden peace and a serenity which were not of this world. Yes, I can still vividly see it.

■ **Lokenath Bhattacharya**

MISSISSIPPI

- Length: 3,779 km. (With Missouri 5,985 km.)
- Rises at Lake Itasca in north-central Minnesota and empties into the Gulf of Mexico
- Mean discharge: 18,000 cubic metres per second
- Area of basin (Mississippi/Missouri): 3,220,000 sq. km.
- The name Mississippi derives from the Algonkian Indian words *misi* = big and *sipi* = water

Typical cypress swamp landscape in the lower Mississippi. With its thick trunk and exposed roots, the bald cypress *(Taxodium distichum)* is the dominant tree species in the region.

Photo Fred Mayer © Magnum, Paris

The stream of American consciousness

by John Seelye

I am one of a clear minority in America, for I have travelled on the Mississippi River by paddlewheel steamboat, the only way to encounter that greatest of American streams, if only because it connects you to a remarkable epoch in our history. The steamboat was the *Delta Queen*, originally a Sacramento-River auto ferry (the dining deck slopes upward to the centre, giving your soup a rakish tilt) built in Scotland, but the experience was still authentic.

The river was at flood stage and the boat made slow time upstream, yet all time on the river is slow time. Schedules have to be revised every day, always backward. Leisure is enforced as the scenery creeps by, what scenery there is, which isn't much, not on the lower river. Because of the levees, which elevate the stream above the flood plain, there is literally no shore line by which to gain perspective, no visible habitation of men. Relief is provided by sandbars with a stubborn clump of willows or alders clinging to them or by an occasional towboat pushing a string of barges (towboats on the Mississippi do not tow), with perhaps a deckhand or two in evidence, a precious sampling of humanity. The rest is river, a rumpled copper sheet of muddy water, apparently motionless at a distance, but hissing around the hull as it sweeps to the sea, pulling itself into hundreds of small whirlpools, a vast field of force drawn down from the huge interior.

On the map, the Mississippi assumes a serpentine shape not immediately obvious to a passenger on the lower river. Early in the nineteenth century, one mad projector suggested that the meanders be bisected the entire length of the river by means of two canals, with the intention of improving navigation and reducing floods. The project was never undertaken, but Americans have continued to impose the rule of the line on the river's natural inclination towards a serpentine—which is to say spiral—course. Levees and wingdams act toward the same desired end, but such is the force of the river that all engineering feats are never more than compromises with short-range effectiveness.

Right now, it is only by means of artificial devices—including a controversial dam—that the river is kept flowing past New Orleans. Its natural tendency to change course will eventually win out and the great city will be left high and boggy. The Mississippi is like that great serpent destroying the house of Laocoön: the river takes its meaning from the futile efforts of men to overcome it.

Draining the centre of a large continent, drawing down water from both the Allegheny and the Rocky Mountains, the Mississippi puts forth a seductively symmetrical even neo-classical shape, linear in implication and inspiring to the imperial sensibility. Ironically (and much associated with the great river is ironical), the man who is credited with discovering the Mississippi, De Soto, regarded it as a barrier to his westward search for the fabled Indian cities of gold.

It was La Salle, a century later, for whom the Mississippi first assumed a promising shape: Joined to the St. Lawrence by a network of lakes and lesser rivers, it would extend the French empire in North America all the way to the Gulf. It is difficult to read the story of La Salle as told by Francis Parkman without thinking of the story of Kurtz as told by Conrad, for both stories are about the madness that quest for empire engenders.

Reading the story of La Salle, we are brought back to a time when the Mississippi was a truly savage stream, an

American Congo: T.S Eliot's great, brown God. *"Nous sommes tous sauvages,"* that was the slogan La Salle found scrawled across the hull of the boat that was to have taken him down the Mississippi from Fort Crèvecœur on the Illinois River. It had been left by deserting *coureurs de bois*, and contains a truth that may have escaped La Salle, who persisted in his attempt to wrest the serpentine Mississippi into an imperial shape. The explorer finally did descend the great river, but on a return trip he was set upon by his own men and killed.

•America has many famous streams—the Hudson, the Ohio, the Potomac, the Susquehanna, among them—most of which bear Indian names, but it is the Mississippi that is most Indian in character. As the earliest explorers noted, the Mississippi changes its nature at St. Louis, where it is joined by the Missouri: "The calm is gone, the grouped isles disappear, the shores are jagged and rent, the hue of the water is clayed, the before moderate current is rapid and vexed." So wrote Herman Melville of the difference, drawing upon not only personal recollection but many observers before him: "Like a Pawnee from ambush" comes down the Missouri from the west, and "under the benign name Mississippi it is in short the Missouri that now rolls to the Gulf... the Missouri that by open assault or artful sap sweeps away fruit and field, graveyard and barn." Even now the Mississippi below St. Louis is still a savage stream, an American Congo barely contained by man-made chains. And at the start there were no chains, the river a force without constraint.

The symmetrical location of the Mississippi did not escape that neoclassical geopolitician, Thomas Jefferson, who saw the river as a vast waterway by means of which the interior of North America could be settled and exploited. The negotiations with Napoleon that resulted in the Louisiana Purchase were first undertaken merely to obtain navigation rights on the Mississippi. Having bought the river and much of the territory west of it, Jefferson and his contemporaries were presented with yet another problem, for descending the Mississippi was not easy and going up it was nearly impossible.

Flatboats and rafts were the chief means of down-river conveyance: clumsy and hard to manœuvre, they did not all make it down to New Orleans but were torn apart by snags or wrecked on hidden sandbars. Some were attacked by Indians or river pirates, white renegades who imbibed lawlessness from the wild river. The up-river voyage was made by keelboats, graceless yet somehow heroic craft that were propelled by a unique kind of boatman of which Mike Fink is the legendary type: scarcely distinguishable from river pirates because mad with the licence of the untamed frontier, these semi-barbarians poled and pulled their slow way upstream foot by foot, cordelling with winch and rope when poles would not work or sometimes hauling themselves along by grabbing at the foliage on the bank.

Heroic, yes, but inefficient, and it would be a later generation that celebrated Mike Fink and his wild brethren. Americans of the period of Washington and Jefferson did not much prize heroism in its wilder forms, nor were they charmed by picturesque inefficiency. A contemporary carving by William Rush decorating the Fairmount Waterworks outside Philadelphia showed two opposing allegorical figures: "The Schuylkill Chained" (an old man lying on rocks wrapped in iron links) and, "The Schuylkill Freed" (a young ▶

Photo © IPS, Paris

William Faulkner (1897-1962), the U.S. writer who won the Nobel Prize for Literature in 1949, spent almost all his life in the State of Mississippi. He transposed the deep south he knew into the imaginary "Yoknapatawpha", the setting of a fictional saga which opened in 1929 with *Sartoris* and ended with his last novel, *The Reivers* (1962). Yoknapatawpha, a compound of two Indian expressions, means "the country where the water flows slowly through flat lands". Right, Faulkner outside his home at Oxford, Mississippi.

▶ woman resembling Liberty seated by a waterwheel). Rush meant to demonstrate that a river you cannot use is in effect an imprisoned stream: dam it, pipe it, put it to work, and you free it.

Robert Fulton, who had earlier seen canals as the answer to America's transportation problems (and submarines and torpedoes as instruments of world peace) found the solution to the navigational challenge of the Mississippi in the steamboat. An eccentric inventor named John Fitch had actually put together a working steamboat in the 1780s, but the time was not right and Fitch died ruined and half-crazy, killing himself on the banks of the Ohio.

Robert Fulton was nothing if not a man synchronized with his age, and though his submarine and torpedo found no buyers, his steamboat sailed straight into the future that is now our history. Everyone knows about the *Clermont* (actually called *The North River*, as was the Hudson in Fulton's day) and its epochal voyage in 1807 up the Hudson to Albany. But not everyone knows that Fulton, like John Fitch before him, realized that his invention would be of greatest service on the Mississippi. Within four years the *New Orleans* had made its epical way downstream against a spectacular backdrop of earthquake and flood all the way from Pittsburgh to the Gulf.

Shortly after the imperial plan of western waterways was linked to the Hudson River by the Erie Canal, De Tocqueville visited the United States to check on the progress of democracy. He discovered that progress if not democracy had been considerably accelerated by steamboats, but he also learned that these distinctly American craft were hastily and often shoddily constructed, because, as a riverman explained to him, they seldom lasted more than five years and were always being improved upon in terms of design and speed. Along with Franklin's lightning rod, the steamboat was an American invention, perhaps *the* American invention (before the light bulb and motion picture—for surely Edison is *the* American inventor) in that it was a product of human ingenuity spurred by commercial necessity, one which prized speed over safety.

One of the most beautiful of all mechanical inventions, the paddlewheel steamboat is now regarded with a great deal of nostalgia, but until it was displaced by the locomotive, the riverboat was for the mid-nineteenth century American the apogee of technological progress, and was celebrated as such in famous lithographs by Currier & Ives. The Hudson's riverboats were also known for their beauty, but the steamboats depicted by lithographers were most always boats on the Mississippi, usually seen racing by moonlight, their furnaces glowing and smokestacks showering the scene with sparks.

The Great River had at last met its match, yet the imagery of savagery persists, put forth by the demon god Steam, as tricky a servant as ever conjured up by man (before nuclear power), nor did the River quietly surrender. As De Tocqueville's informant noted, the life span of a Mississippi steamboat was not long, and what snags and sandbars did not accomplish, exploding boilers effected with much more dramatic force.

Most of the Currier & Ives prints were published after the Civil War, even as the Mississippi riverboat was being replaced by the steam locomotive as a symbol of modern transportation. As celebrations they were already tinged with nostalgia, as was Mark Twain's *Life on the Mississippi* (1883), a book that like its author is split down the middle, one half a sentimental memorial to life as it was on the river before the Civil War ("Old Times"), the other a paean to the triumphs of modern technology that had made piloting no longer a necessarily heroic act. If the Mississippi is the Trojan Serpent then Mark Twain is Old Man Laocoön in our national iconography, thoroughly wrapped up (as he might have observed) in his subject, Snake and Man virtually indistinguishable—River and River God.

Until Mark Twain's appearance upon the literary scene rivers were not important to American fiction despite their primacy in American life, but were mostly seen flashing through foliage or floating a Cooper Indian in a Cooper canoe. Mark Twain is our premier river writer as the Mississippi is our paramount stream, and of the many books he wrote we remember him best for those through which the Mississippi moves. We remember him best of all for one book, through which the great river moves with all the rights and privileges of a major (though it is literally a supporting) character: take away *The Adventures of Huckleberry Finn* and you remove not the cornerstone but the keystone to Mark Twain's œuvre. The rest simply will not stand alone. Next to Old Man Laocoön writhe his two sons, men in appearance but boys in stature: call them Tom Sawyer and Huck Finn, for if Mark Twain is a boy man surely his greatest creations, his Gemini, are children in size only—impossible kids.

Mark Twain, his boys, the serpentine River, combine to put forth a mystical

CONTINUED PAGE 38

Photo © IPS, Paris

Trumpeter, singer, band leader and composer, Louis Armstrong (1900-1971) is one of the greatest names in the history of jazz. He was born at New Orleans, the capital of Louisiana, on the left bank of the Mississippi, the longest river in the United States, initially playing on the riverboats before travelling on to Chicago and New York.

NILE

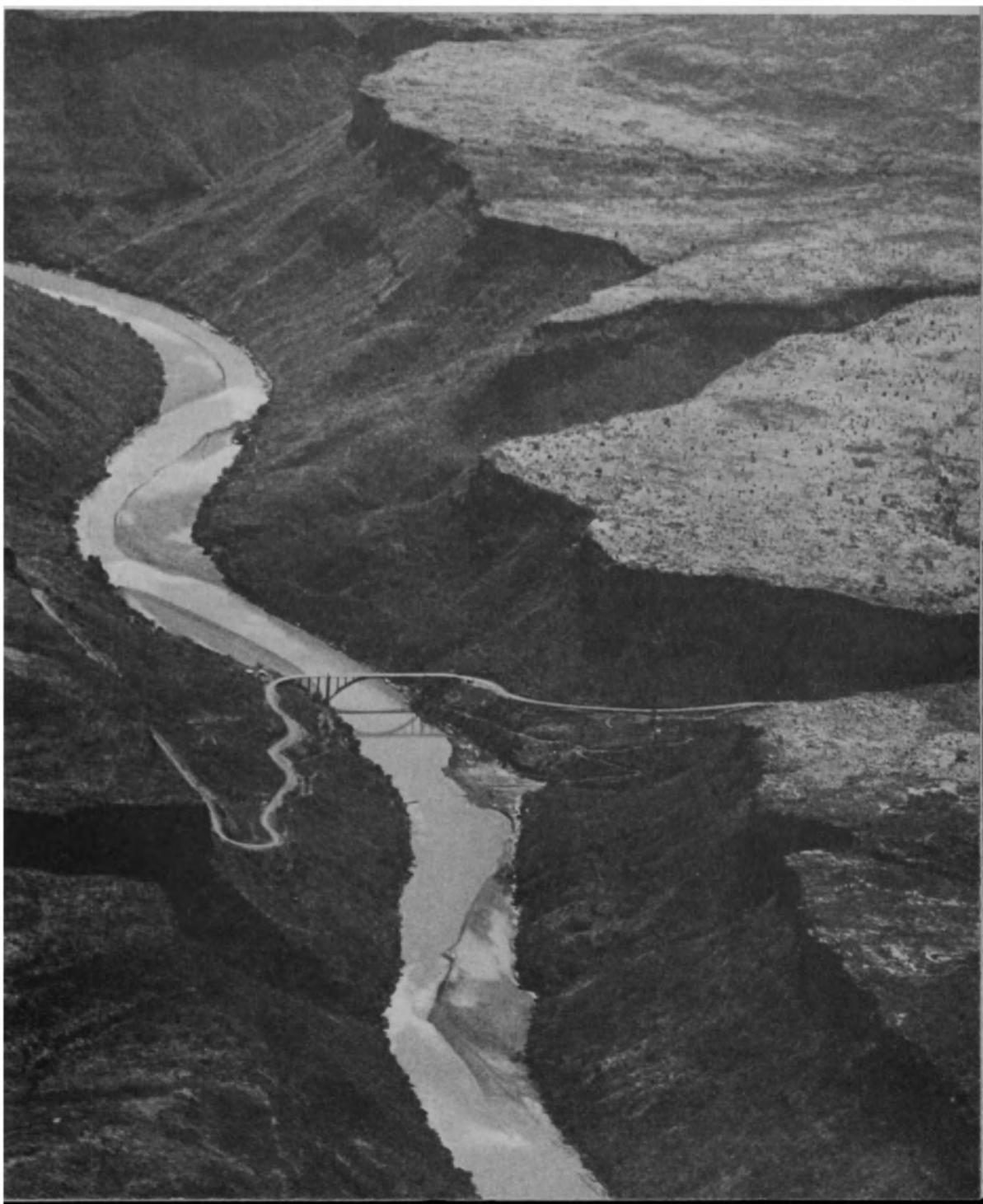
- Length: 6,670 km.
- Rises in Burundi as the Kagera River and empties into the Mediterranean Sea
- Mean discharge: 3,000 cubic metres per second
- Area of basin: 2,870,000 sq. km.
- The White Nile (800 km.) is the largest tributary of the Nile
- Lake Nasser, the reservoir formed upstream from the Aswan High Dam (completed in 1971) is the largest man-made lake in the world

Uncommon heritage

by Lotfallah Soliman

IT is not by chance that, in order to ensure their supremacy, the Great Powers are engaged simultaneously in an arms race and a memory race. Victory will no longer go only to the power who possesses the most sophisticated weapons, but also to the one which will provide itself with the most extensive memory. Memory as an instrument of power is a fairly recent discovery, but it has long been known that memory generates the will to power.

The Nile is born in lands whose memory rests only on tradition, and it ex- ▶



The Blue Nile scores a deep gorge through the high plateau of Ethiopia where it has its source. Air view, right, shows bridge on the road from Addis Abeba to Asmara.

Photo Georg Gerster © Rapho, Paris

▶pires in a land whose memory is monumental. No more was needed for Egypt to claim mastery of the Nile, indeed to become the Nile. But it was not entirely her fault. All the great kings of Egypt, from Ramses to Mohammed Ali, tried to pass the barrier of the upper cataract, but the force of the current always drove them back from Africa to the sea.

It was only in the second half of the nineteenth century that the region of the great lakes was finally discovered, and it was not until the 1930s that all the sources of the Nile were identified. Meanwhile, there was nothing for it but to live with the Egyptian memory and the myths it created, and admit that the only

The Euphrates

In dream I saw the Euphrates
Winding its somnolent way,
Splash of water-rat, wide-curving
[mud-flats
Spangled with arborescent spider's webs

Eugenio Montale

Nile without a descriptive name is that which flows from the sixth cataract, north of Khartoum and Omdurman, but counting against the current. Further upstream, the Nile is given an adjective: the White Nile, the Blue Nile, the Nile of the Mountains, the Nile of the Gazelles, the Nile of the Giraffes. The Nile is the only great river in the world the description of whose course starts with the mouth and whose cataracts are numbered from downstream upstream, as if to show that, although the flower and the ear of corn may well be at the tip of the stem, they are nonetheless the final ends of all existence.

The Nile is also the only great river to flow from South to North. Having entered Asia in pursuit of the Hyksos, Thutmose I, founder of the New Empire, halted at Carchemish (now Jerablus). He had just reached the utmost limits of the logical world. Was he not confronted with a river—the Euphrates—on which he would have to row against the current in order to go northwards? He was content to cross it, to erect a stele in memory of his crossing and to turn back, not forgetting to baptize the river "the sea whose water flows in reverse".

From earliest antiquity until as recently as the late Middle Ages, it was impossible for any Egyptian, whether he be king, priest, warrior, geographer, scribe, craftsman or simple peasant, to imagine that it was his world that was different. The Cosmos, like the Nile, could only be Egyptian.

For centuries, at every summer solstice the Pharaoh himself, surrounded by the high dignitaries of his kingdom, would proceed in state to the river to cast therein a rolled papyrus. The papyrus contained, not an offering, but an order to the river to rise. Did this symbolize the inability of the priests and wise men of that time to explain the phenomenon of a river in spate, a spate regularly repeated and eternally renewable? No doubt, but it also symbolized the man-god's will to reign sovereign over the god Nile.

This symbolism summarizes to perfection the sometimes ambiguous relationship which existed for centuries until modern times between the men of the "Nile without an adjective" and the river that emerges from nothing. "Egypt is a gift of the Nile". That may have been true for Herodotus and those coming after him who would think it clever to quote him, but not for the Egyptians whom he stripped of their sovereignty. If the aphorism were true, if they were no more than the recipients of a gift, albeit the tears of Isis, the sister and spouse of Osiris and the mother of Horus, by what right could Egypt and the Egyptians assert their will to power and immortality? Since the gods are mortal, only man bears eternity within him and it is for him and him alone to command and for the gods to bow to his will. Between the order to rise issued by a Pharaoh to the god Nile, and the Great Dam which tames this god, there is a continuity which confers legitimacy on both Menes and Nasser and makes twenty centuries of foreign domination a passing incident. "Eternity is Egyptian", said André Malraux.

This "Egyptianization" of the Nile was not devoid of excess bordering on racism before its time. All the great kings of Egypt dreamed of conquering the lands of the Upper Nile and even Abyssinia. But the stele of Semna, which dates from four thousand years ago, from the XIIth dynasty, forbade "for ever" the "negroes" to pass through Heh when going down to Thebes. And when a king from the Upper Nile, whose civilization and principal god Amon were, after all, borrowed from Egypt, tried to set himself up at Thebes, the riposte was to be terrible.

The Saint Lawrence

Oh childhood that five-leafed hand
Stretched athwart my country
I will run up again on the wave of your
[wrist
The dim towns watching over cradles
and already your face whole as a sea.

Gatien Lapointe

Nevertheless, the silt carried by the Nile is "negro", and all Egyptian—or rather Nilotic—mythology was to bear the mark of this negritude. The first idol of the Egyptians has a woman's head on the body of a hippopotamus. The judge of the dead is both lion and crocodile. No other religion has animalized heaven to the same degree, and the entire bestiary of the Egyptian pantheon is of equatorial origin. In the absence of written records, one can only state that the recently discovered Upper Nile and the Lower Nile whose history is older, certainly lived under the same religion. It is in the

Pigeons watch from their monumental dovecote "pyramid" in the Nile Valley as the caravan passes. Perhaps the first type of bird tamed by man, the domestic pigeon has been an important source of food in Egypt since ancient times.

Photo Silvester © Rapho, Paris

Cairo Museum that one can see the African gods Hathor and Apis in statue form.

Presumptuous or not, Egypt, already the memory of the Nile, has become the Nile, and none outside her is the Nile, and wherever she is involved the Nile must be present. Some years ago, when there was no longer any mystery about its source or the mechanism of its floods, a Tunisian friend was asked by the taxi-driver who picked him up at Cairo airport whether they had the Nile in Tunisia. In the popular mind, identifications had become superimposed to such a degree as to be merged into each other. My friend spoke Arabic. Tunisia was therefore an Arab country; and since the Nile, already an Egyptian river, had become an Arab river, there could no longer be an Arab country without the Nile! But the illusion was not new. Already in the eleventh century the Arab geographer Al-Idrisi had drawn a map showing a branch of the Nile that flowed into the Atlantic after crossing the whole of North Africa.

Starting from this consciousness, both mythical and overweening, Egypt saw herself as the principal, if not the only regulator of the Nile. She was to reject every proposal to raise the levels of the African lakes preferring the creation of a huge artificial lake between the first and second cataracts, that is to say, mainly on her own territory.

The Egypt of the myths died with the construction of the Great Dam. For the first time in their history, the Egyptians are alone, without gods and with no prospect of miracles. At last! So much the worse! It is for men to forge their own destiny.

■ **Lotfallah Soliman**

Photo Georg Gerster © Rapho, Paris

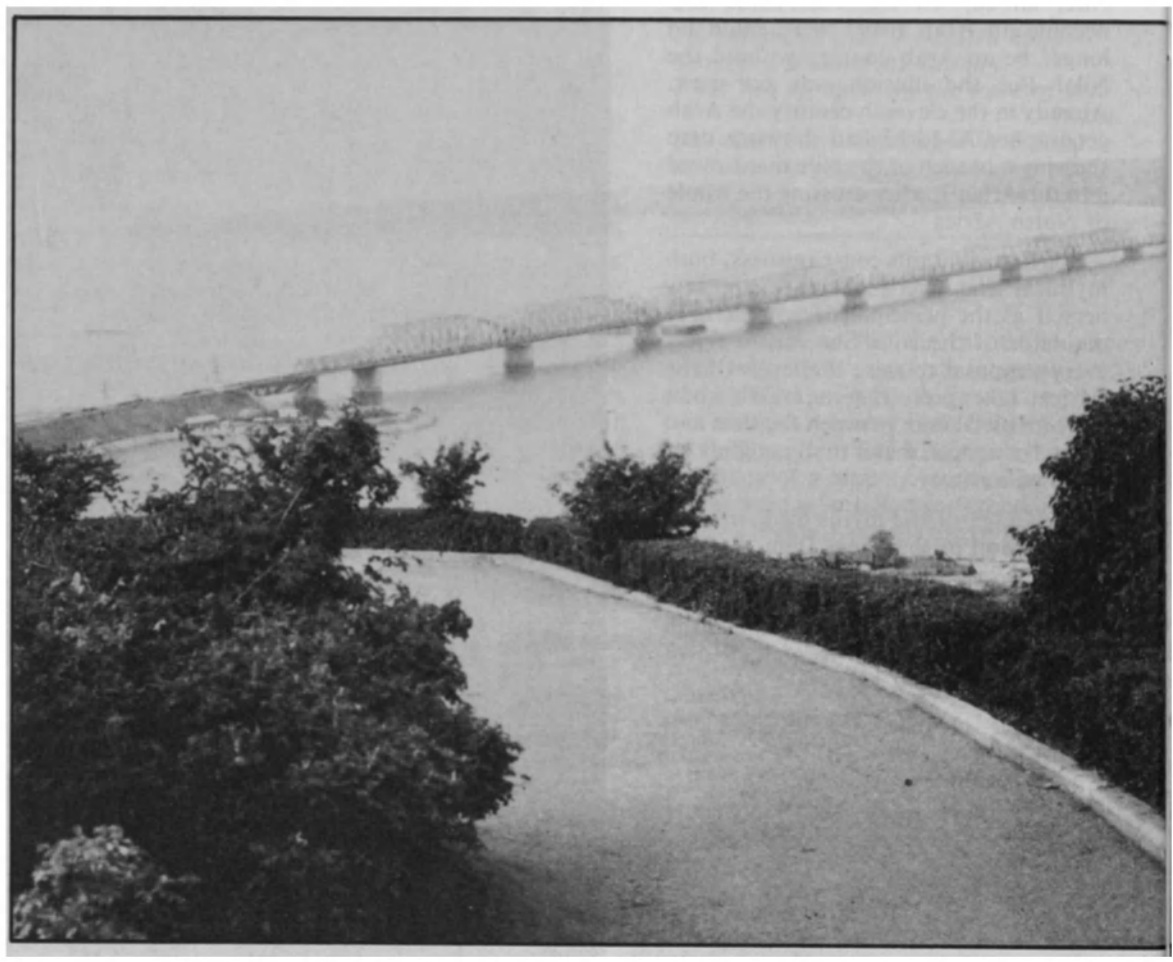
Almost all the population of Egypt is concentrated in villages, towns and cities on a narrow ribbon of land bordering the Nile. Above, air view of central Cairo looking downstream shows the islands of Ar-Rawdah (foreground) and az-Zamalik. With a population of over 6 million Cairo is Africa's largest city.

VOLGA

- Length: 3,350 km.
- Rises in the Valdai Hills north-west of Moscow and empties into the Caspian Sea
- Mean discharge: 8,000 cubic metres per second
- Area of basin: 1,360,000 sq. km.
- The Volga and its more than 70 tributaries carry two-thirds of all Soviet inland freight
- In ancient times the Volga was known as the Ra

'MATUSHKA'

by Leonid Likhodeev



Right, bridge over the Volga at Ulyanovsk (formerly Simbirsk). A large industrial centre at the confluence of the Volga and the Sviyaga, the city was re-named in honour of its most famous native son, Vladimir Ilyich Ulyanov (Lenin).

Photo Zeyons © Rapho, Paris

EVERY river starts at a source, but not every source gives birth to a great river. There are few mysteries in this world more fascinating than the mystery of birth, of that enchanting moment when nothingness gives place to life. So it is with the birth of a river from a bubbling spring. If the Russians call springs "keys", it is because they open on to highways.

This frozen little spring emerges from the earth in the Valdai forests. It babbles amongst the dead leaves that serve as its swaddling clothes, and branches bend protectively over its cradle. Slowly but surely the little stream forces its way out of the brushwood. Here a great highway, 3,690 kilometres long, emerges from the depths of the centuries; here begins a mighty river—the Volga.

Winding its way through field and meadow, it borrows the colours of their wild spring flowers and draws sustenance from the living force of its tributaries. Grown to full maturity, it carries other rivers along with it, ever fuller, ever broader, impatient to reach the sea. It is the most celebrated river in Russia.

In the dark night of pagan times, man attributed souls to rivers, creating them in his own image and likeness. Rivers were wise men, rivers were muses, rivers were warriors, knights, tillers of the soil. But the Volga has always been *Matushka,* a mother gentle yet severe, fearsome in anger yet tender in compassion. She has always been a mother because she teaches what is good. She rewards the brave and consoles the weak, and her heart is always with those who set forth to seek their fortune.

We Russians become acquainted with the Volga so early in life that when we reach adulthood we are surprised to find we have known her so long. From our earliest years her songs have rocked us to sleep. Her songs are sad because those who invented them were sons of toil who hauled behind them the endless chain of daily labour. But there are other songs in which freedom unfolds its wings. No other river in the world has become so closely identified with valour and the spirit of untrammelled freedom.

Rivers have memories, and the Volga's memory is vast and deep. She remembers the thud of the axe as the first *isbas* (log huts) were built, and the soft slap of mortar trowelled on to brick. She remembers the exploits of Yaroslav the Wise and the

odd behaviour of his ineffectual successors. She remembers the ferocious hordes of Batu Khan, the grandson of Chingiz Khan, and the avenging sword of Dmitry Donskoy. She remembers the noble appeals of a citizen of Novgorod, Kuzma Minin of the withered arm, and the daring raids of the Cossack rebel Stenka Razin. She remembers the Volga boatmen, their route marked by the rough-hewn crosses on their countless graves along her banks. She remembers too the battle that decided the destiny of our peoples.

The Tiber

Those graceful groves that shade the plain,
Where Tiber rolls majestic to the main,
And flattens, as he runs, the fair campagne.

Ovid

The battle took place here, on the banks of the Volga whose waters now break against the granite quays of a new city, risen from the ashes of Stalingrad. The Volga was both an obstacle and a way forward, frontier and defence. Her waters ablaze with oil, she seethed and foamed in anger, and wept real tears for her children. Today's children cannot imagine what it was like, and heaven forbid that they should ever see such combats.

The powerful river pursues her ancient course through new "seas", the large reservoirs that form the majestic "Volga Stairway". For a long time there existed on the Volga a short cut via the "Samara Bend". This involved travelling downstream as far as Perevelok, where boats were transported overland on rollers to the River Ussa, by following whose course the boats could rejoin the Volga. This itinerary was called "the Zhiguli Roundabout". It was already in use by brigands who lay in wait in the Zhiguli foothills for the rich merchants' caravans. Nowadays the Ussa flows directly into the Sea of Kuybyshev and tourists and yachtsmen sail its waters. This once romantic stretch of the Volga has become the river's most industrialized area. Three sister towns have grown up on the banks of the Sea of Kuybyshev—Togliatti, Komsomolosk and Zhigulevsk—three towns built by young men who remember, as if it were yesterday, the day work began on their construction.

In former times, the Volga towns were so distributed that those with masculine names lay on the right bank and those with feminine names on the left. On the right lay Yaroslav, Nijni Novgorod (now Gorky), Saratov, Simbirsk (now Ulyanovsk). On the left were Kostroma, Kazan, Samara (now Kuybyshev) and Astrakhan. Few Russian towns suffered so much under enemy attack and few were so seriously damaged. Nevertheless, although history has dealt harshly with them, these towns have preserved many unique examples of ancient Russian architecture.

Engineers at work in the generator room of the V.I. Lenin hydroelectric power station are dwarfed by the plant's massive generators which have a capacity of over two million kilowatts. Situated at the "Samara Bend", the V.I. Lenin power station produces about a quarter of the more than forty thousand million kilowatt hours of energy supplied each year to the Soviet national grid by hydroelectric installations on the Volga.

In these works of architectural art men reproduced the features of their natural surroundings—pyramid roofs that echoed the pointed silhouette of the fir tree, tracery that recalled the shadows cast by the birch—and decorated with birds and flowers the setting of their daily lives. It is not by chance that the popular art of the craftsman was born in the most beautiful regions of the Volga, and that the objects which emerged from the hands of these craftsmen bear witness to the extraordinary charm of this area.

The waters of the Volga flow majestically past mountain and forest, field and meadow, between banks that recall men dear to our hearts. It was here on the Volga, in former Simbirsk, that Vladimir Ilyich Lenin was born. From the Volga came many ▶

The right bank of the Volga, just below Kuybyshev.

Photos Eugene Kassin and Marc Redkin © Progress Publishers, Moscow

▶ Russian writers, musicians and savants whose names are known the world over, as well as people of every kind, rich men poor of spirit, and poor men with generous hearts. The petty bourgeoisie is full of ignominy and tramples on human dignity. But sometimes great men emerge from its murky depths to denounce them without pity.

Such a one was the great Soviet writer Maksim Gorky. He came from a modest home in Post Office Street at Nijni Novgorod, and he has made it immortal. He travelled the Volga as a workman wanders down the high street, but he travelled as a philosopher who searches for the meaning of life. The Volga was his cross, his joy, his university, the school which places the pen at the service of the conscience.

Time broods over the Volga, and tirelessly the Volga pursues her seaward course. The Akhtuba, the Volga's main distributary, makes a sharp bend towards the east and

The Seine

O shepherd Eiffel Tower, your flock of bridges bleats this [morning

Guillaume Apollinaire

thousands of tributaries, canals and deviations fan out into the steppes. Peaceful landing stages punctuate the river banks. Camel caravans cross the sands beside the Caspian and an odour of wormwood comes from the pastures in the endless steppes. Everything here depends on the Volga, the hopes of those who till the soil and raise the cattle. Her waters nourish the splendid grain, ripened by the sun, that flows in golden showers into the holds of her barges, alongside the brilliant white salt from the Basunchak mines: it is with the bread and salt of welcome that the Volga receives her guests.

Between the Volga and the Akhtuba lie green flood lands, as unexpected here as an oasis in the desert. This land is fertile and rich in harvests. If you look at this region and the Volga delta on the map, you will see that the contours are those of the legendary horn of plenty turned, as it were, towards the Caspian. To reach the sea you must descend the river beyond Astrakhan, passing the island where the flags of the fish factories flap in the wind, the fishing-grounds and the dense jungle which occupies the lower part of the nature reserve formed by the delta.

The Astrakhan reserve is a scientific centre of world-wide importance for ornithological studies. Everything there looks rather strange, like the illustrations in school books depicting a universe long since disappeared. Saiga antelopes bound across the salty expanses, hundreds of varieties of water-birds flap their wings amongst the reeds, white and black swans sail by, proudly stretching their necks, brightly-coloured pheasants hide in the thickets, white herons pick their way on telescopic legs, and pelicans who have survived from the depths of geological antiquity make their nests on enormous rafts that they themselves have assembled from reed and sedge stalks and willow branches. Seen from afar, their nests look like strange flowers with motionless white and rose-coloured petals.

In June, when dawn breaks above the tall reeds, the cool nelumbo lotus unfolds its petals on the motionless surface of a tranquil cove. The morning breeze gently rocks the pink and purple flowers above dull green leaves. The Volga delta is the most northerly point where this legendary flower can be found. Here, nature's peace is never broken by the noise of engines; only the occasional dip of an oar betrays the presence of a man hidden away with his microscope and test-tube. The law of the reserve is never to disturb nature.

Seen from the air, the Volga delta looks like a blue-veined hand deformed by toil. To be sure that it really does flow into the Caspian, you only have to look at the map.

Still, it is better to follow the river, to emerge on the vast expanse of the Caspian, once known as the Sea of Khvalynsk, and see that the entire route is a hive of activity, as far as the eye can see and beyond. Here at its mouth, just when she joins the sea, it is as if the Volga is musing on the Titanic tasks accomplished. On her way to the sea she has turned hundreds of turbines, transported hundeds of thousands of craft of every sort, carried thousands of tons of goods. She has watered fields and bathed meadows, and has united the far-off waters of the Baltic with those of the Mediterranean and the Atlantic.

■ **Leonid Likhodeev**

The birthplace of Europe's greatest river. The building in the background marks the spot at which the Volga first springs from the earth in the Valdai Hills northwest of Moscow, near the village of Volgo-Verkhovye.

Navigable over the greater part of its length, the Volga and its tributaries form a vital commercial network carrying some two-thirds of all Soviet inland freight, with timber accounting for 25 per cent of the total. Above, a member of the crew of the Volga riverboat "Spartak".

Photos Eugene Kassin and Marc Redkin © Progress Publishers, Moscow

YANGTZE

- Length: 5,520 km.
- Rises in the Tanggula Mountains in the Tibetan Highlands and empties into the East China Sea
- Mean discharge: 34,000 cubic metres per second
- Area of basin: 1,800,000 sq. km.
- The river's generally accepted name in China is Chang Jiang

The great river flows east

by Bai Hua

Photo © Schulthess, Switzerland

With a population of 10 million, Shanghai is China's commercial metropolis and one of the world's biggest seaports. Above, view over the Su Chou river near the point where it meets the Huang-pu-Chiang, a tributary of the Yangtze.

I live at the head
Of the Yangtze River,
You at its mouth
Far, far away.
I long to see you, but this cannot be
Though I miss you every day.
And every day we drink
Both from the same river.

THIS poem, written in the eleventh century by a Chinese poet called Li Zhiyi, brings back to me many a childhood dream full of tender feelings. I read it first before I was six years old, and since then the Yangtze, the Chang Jiang (Long River) as the Chinese call it, has flowed like a poem through my heart.

In my child's imagination the Yangtze was like an embroidered silk ribbon meandering between dark green mountains. At the head of the river, so the poem goes, lives a beautiful girl and at its mouth a handsome young man. Day and night each yearns for but cannot see the other, though they always fetch water from the same river.

The Yangtze flows on towards the east, carrying with it the girl's passionate longings. In the ripples of the river her lover can see the girl's slim shadow, and in the splash of its waters hear her gentle whispers. How did they get to know each other? And why are they now separated? Was there no small boat that could bring them together? These questions kept nagging away at me, the puzzle of my childhood and adolescent dreams.

In the summer of 1938, when I was eight, my family moved to Wuhan, a city at the confluence of the Han Jiang and the Yangtze which was formed from the merger of three once separate towns. Not until then did I see the great river for the first time. She was longer and wider then I had expected, with many steamboats, junks and tiny ▶

▶ fishing boats which, I feared, might be swallowed up in her terrifying waves.

I became more worried about the lovers of the poem, for the people aboard the steamboat were so ferocious that I felt sure that they would refuse them a place aboard. Alas, perhaps they would never meet again!

What made things worse that summer was the situation in Wuhan, where agitation was spreading like wildfire. At that time the iron heel of the invader was trampling the Central Plains and fierce aerial combats were going on night and day over Wuhan. The patriot composer Xian Xinghai was rousing the people to fever pitch with his songs of national salvation.

Thousands took to the streets and built huge floating stages on the Yangtze by mooring boats together. There everyone was a singer and all had tears in their eyes. Gradually the seething crowds and the turbulent river merged into one torrent in my young heart.

Almost half a century has passed since then, but today I can still hear the singing of the crowds—feverish singing that sounds like the raging waves and raging waves that sound like feverish singing. The memory always brings me new strength; but it also raises another question: in the long river of human history, what role should one play? The Yangtze River is no longer the embroidered silk ribbon of my tender childish dreams, but the symbol of a great nation that has experienced numerous sufferings and catastrophes.

Since the early 1950s, I have travelled several times on horseback along the Jinsha River, a stretch of the upper reaches of the Yangtze. I have seen with my own eyes the great length of the river as well as the twists and bends and powerful resistance she faces on her course. Above all, I have witnessed the river's great strength and bravery.

The Yangtze rises among the glaciers of the Geladandong, the main peak of the Tanggula Mountains in west China. Here it is known as the Toutou River, which can be thought of as the Yangtze's infant name. Over the next stretch it is called the Tongtian River, and further on it becomes the Jinsha River which rushes down the Qinghai-Tibet plateau into Yunnan Province.

The Guadalquivir

O Guadalquivir!
At Cazorla your cradle,
At Sanlúcar your bier.

You were a bubbling of spring water
Under a green pine's shade;
How fine your song, how full of
[laughter.

Brackish as you near the sea
Do your muddy waters,
Like me, dream of their beginnings?

Antonio Machado

Along the east side of the snow-clad Baima Mountain (White Horse Mountain) the Jinsha rolls through a rocky, barren canyon, the Ghost Canyon as the local Tibetans call it. Of course, the real creator of the canyon is not a ghost but the mighty roaring torrent.

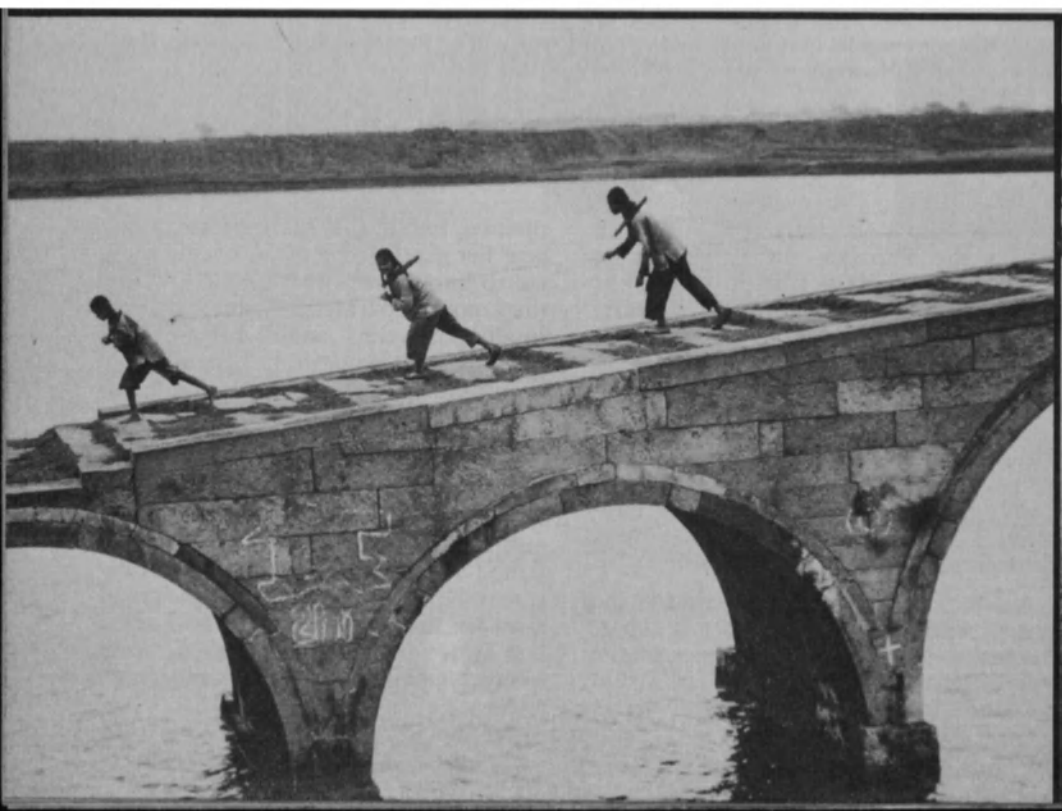
From Shigu (Stone Drum), a small town in Yunnan, the Jinsha enters the deep gorges of the Hengduan Mountains, and there the river is abruptly forced to veer north-east, forming an oddly-shaped loop known as the "First Bend of the Yangtze River". After this sharp turn the river has once again to churn its way through a narrow, sixteen-kilometre-long valley between perpendicular cliffs and snowy mountains. This valley is called "Tiger's Leap Canyon" and is less than thirty metres wide at its narrowest point. Legend has it that a fierce tiger can leap across the canyon here.

The river flow here is fast and furious and keeps up a constant rumble like thunder. Every time I lead a horse fearfully climbing the cliffs of Tiger's Leap Canyon to the sound of its deafening torrents I become lost in a long reverie. I think this must be reaction to an obstacle, submission to a setback that cannot be avoided. For the strong, however, a setback is simply an opportunity for self-assessment and for building up strength for the next advance.

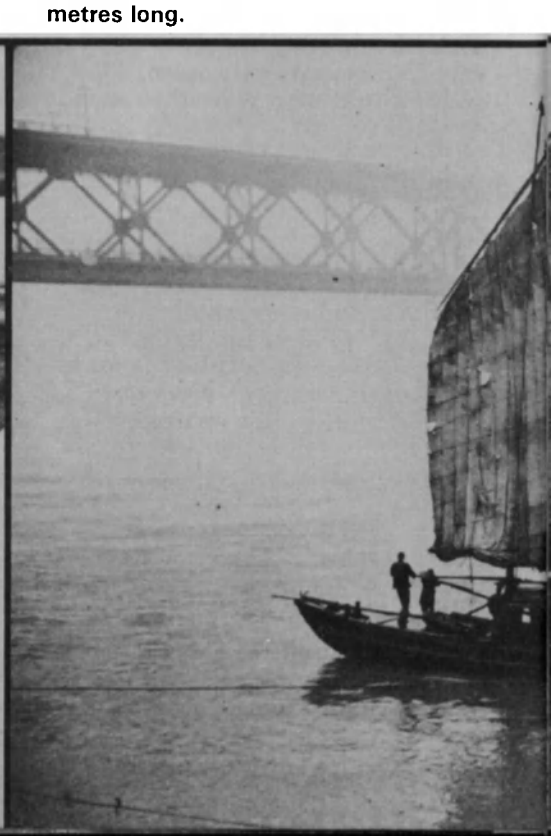
Having backtracked northwards for nearly a hundred kilometres, the Jinsha abruptly forces its way south again for more than two hundred kilometres before it resumes its course towards the east.

An ancient story of the local Naxi people says that the Jinsha is the most beautiful of the three sister rivers, the Jinsha, the Nujiang and the Lancang, that flow in the region of the Hengduan Mountains. There a rude, unreasonable and overbearing prince, the snow-capped Yulong (Jade Dragon) mountain, intends to stop the Jinsha from passing through. But when Yulong is asleep, the beautiful girl sneaks round him and runs away laughing softly.

Not far from the city of Su-Zhou (Soochow), which Europeans named "the Venice of China" because of its interlacing canals and streets, a woman and her two daughters haul their boat along the Grand Canal.



The Yangtze River near Wu-han, capital of Hupeh province. The famous bridge, built between 1955 and 1957, is 1,670 metres long.



It is no wonder that kind-hearted people always try to imagine bright and happy endings to alleviate the hardships of some of life's gloomy experiences.

In the early 1950s, I once saw some slaves in chains labouring on the mountain slopes at the place where the Jinsha river turns south. At that time, people of the Yi minority in the Xaioliang Mountains were still living in a typical slave society.

Even now, on the east bank of the Jinsha and around Lake Lugu, about ten thousand Mosuo people still tenaciously maintain ancient, idyllic forms of matrilinear society and *ahshu* (friend) marriage, now rarely seen in other parts of the world. What really links a woman and a man is neither worldly goods nor their own children, but pure love. Both the elderly and the children in a matrilinear society are looked after by other members of their family. Despite the fact that there are usually quite a number of people in one family, they all manage to live in harmony.

The Magdalena

On the hard Magdalena,
long project of sea,
isles of feather and sand
crow in the sunlight (...)
Green-black and green-green,
the elastic, tense forest,
snakes and wanders in a dream,
moves and reflects
(...)
Ports with dark open arms
children with swollen bellies
and watchful eyes.
Hunger. Oil, cattle...

Nicolás Guillén

As we follow the course of the long, long river we can see the heavy footprints in time of the Chinese people's painful, slow advance.

When the river enters Sichuan Province, it becomes navigable. But even today boatmen can still be seen hauling boats up the river, as described in a poem by Li Bai (Li Po), a great poet of the Tang Dynasty:

"Struggling exhausted against
[contrary winds".

Those stone slabs lining the river, once coarse and rugged, were polished smooth by our forefathers' bare feet. Although we are now able to make jet planes, rockets, ships and tractors, we still cannot afford to replace those sweating boatmen or to abandon the wooden hoes or the yoked-oxen plough used by our ancestors before the Christian era to cultivate vast farmlands.

The Yangtze—the right breast of our mother—has nurtured with her milk the fertile land that makes up more than half the Chinese continent. From time immemorial, many sages have drunk of that sweet milk. Some two thousand years ago, the poet Qu Yuan walked the shores of a lake adjoining the Yangtze while composing his glorious poems; Li Bai and Du Fu, great poets of the Tang Dynasty (618-907 AD), each in turn wandered along the river bank like lone gulls, giving vent to their sorrows in chanting and weeping. Li Bai finally fell into the river when trying to catch the shadow of the moon in its deep waters. Oh what a beautiful, sad tomb he found for himself!

The river sings her way through the Three Gorges, and then an extensive plain unfolds ahead. Here, suddenly, the Yangtze calms down and her waters flow quietly. The river grows wider, stronger and more confident. She is musing on the long course she has taken, a course full of twists and frustrations. She recalls how she has built up her strength, absorbing waters from hundreds of streams and rivers. Now she flows steadily, mightily to the sea, to the outside world, carrying with her melted snow from the glaciers, flowers from the grasslands on the banks of the Tongtian River, golden sand from the Jinsha River, beads of sweat from the faces of the heaving boatmen, the moonlight on Lake Tongding, the lights of the fishing boats on Lake Panyang and the fragrance of rice from the Jianghan Plain.

The bright blue East China Sea warmly embraces the outflowing river, swirling down and down. In the end, the Yangtze becomes merged in the sea, losing her individuality. No, she has just changed. No, she has found herself. No, no, she has fulfilled herself. Now she is no longer the Yangtze, but part of the sea which links all the great rivers that have nurtured the nations of the world: the Mississippi, the Amazon, the Congo, the Nile, the Danube, the Volga, the Ganges.

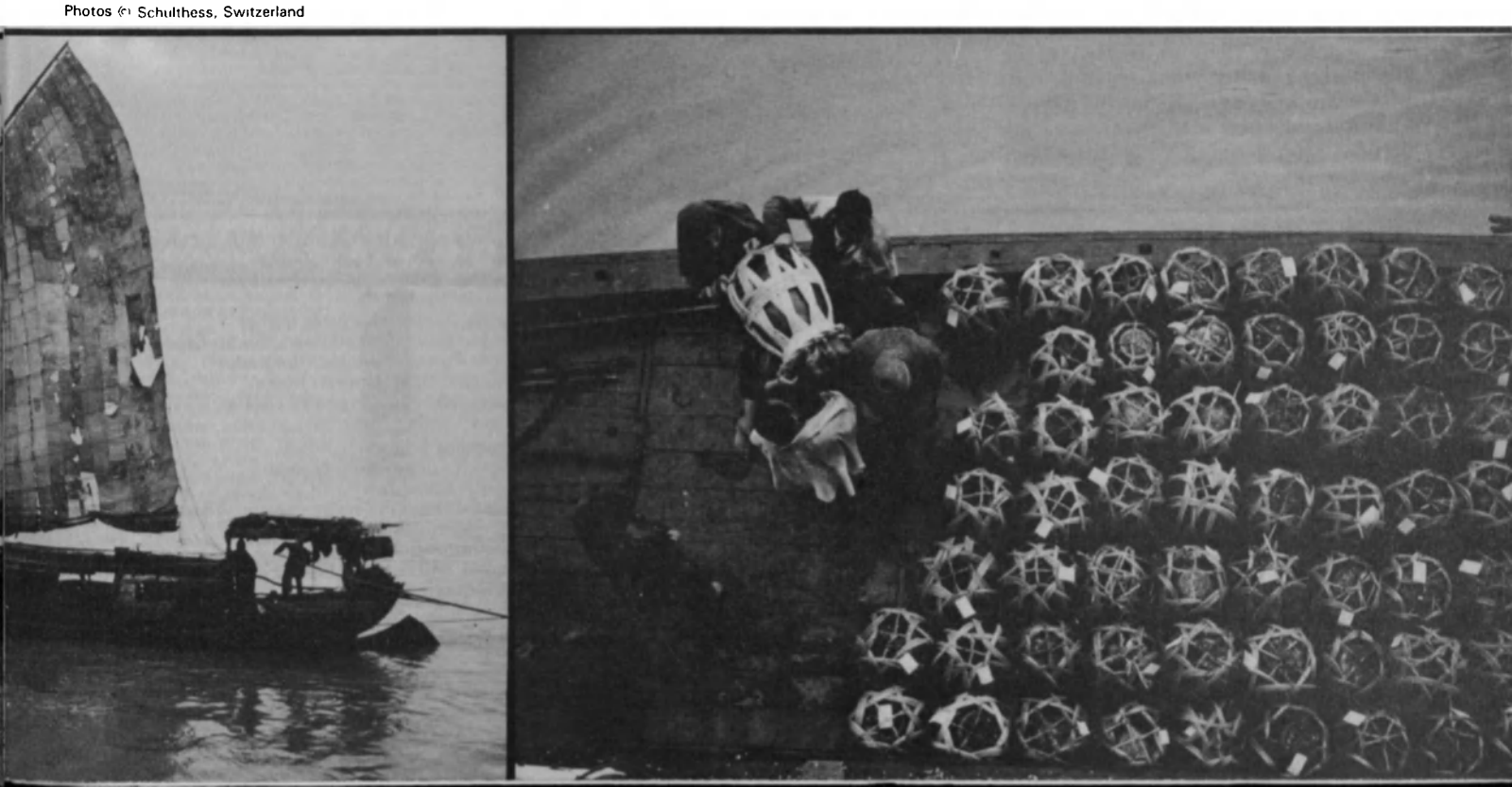
This is why I look upon my worries and moments of depression as happiness. I am truly proud to "drink from the same river", all my life, as millions of my fellow countrymen.

The great river flows towards the east, towards the sea. Every morning, the wave there pushes the red, red sun out of the surface of the bright blue sea.

■ **Bai Hua**

The town of Fu Ling (population 40,000) stands on the confluence of the Yangtze and the Wu Chiang. These great rivers are major trade routes for such regional products as cereals, tung oil, lacquer and citrus fruits.

Photos © Schulthess, Switzerland



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union, a quaternity, the parts of which are inseparable, caught up in what is less a struggle than a synergesis. If the Mississippi is natural power, a great moving field of force, then Mark Twain's *Huckleberry Finn* borrows a certain energy from the river that runs through it, for the river seems to have inspired in the author an imaginative leap difficult to match in our literature. It released something in Mark Twain, something called Huck Finn, an American version of Wordsworth's Child of Nature, dirty, smart-mouthed, ignorant, amoral, yet clearly a blessed Innocent, whose sense of freedom is invariably linked to the on-moving River—even though it is moving in the wrong direction.

The explorer Henry Schoolcraft discovered the ultimate source of the Mississippi, a lake which the Indians called "Elk" but which Schoolcraft named "Itasca" (*Verfitas Caput*), which he later claimed was an Indian word for a woman's breast, the very same Schoolcraft whose *Algic Researches* gave Henry Longfellow the Indian legends which he warped into the weft of *Hiawatha*. But in terms of our literature, the true source of Mark Twain's Mississippi in *Huckleberry Finn* is Henry David Thoreau's Walden Pond, much as Huck's raft is Henry's cabin reconstituted.

Thoreau spent the last decade of his life pursuing the secret of the American wilderness, personified for him as the Indian, and though Mark Twain was contemptuous of noble savagery as put forth in Cooper's novels, his Huck Finn has a lot more red man in him than does Longfellow's Sunday-schoolcrafty Hiawatha. He is the spirit of American rivers incarnate, happiest when free-flowing, wary of civilization and its constraints, and dedicated to helping his chain-laden friend Jim escape society in its most restraining form. These two are perhaps our most famous pair, like the lovers on Keats's urn, forever fleeing, forever pursued, yet somehow, paradoxically, symbolic of the personal freedom we all seek, floating forever downstream over the uneasy bones of De Soto, carried by the river past the sunken wreckage of a thousand steamboats as it reflects the light of a million untriangulated stars.

■ John Seelye

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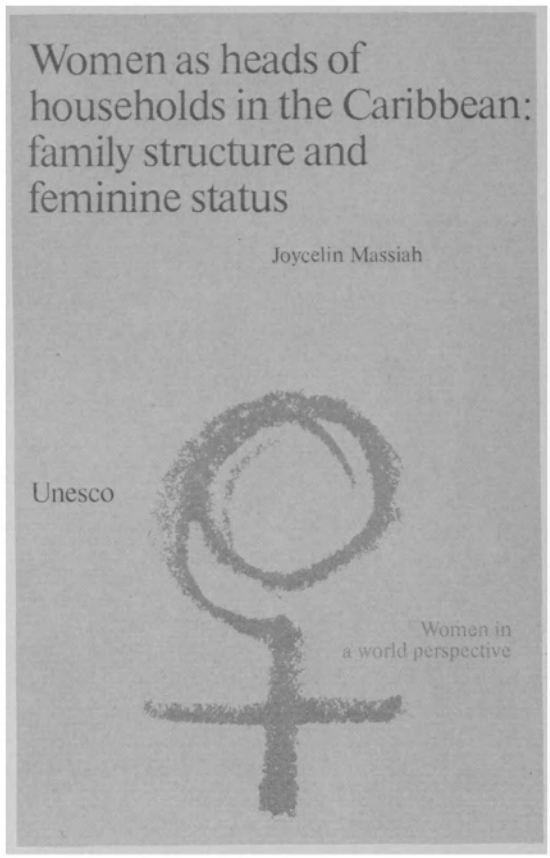
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patriarch father, you are
the secret eternity
of the fecundations,
rivers swoop down on you like birds,
fire-coloured pistils cover you,
the great dead trunks people you with perfume,
the moon cannot guard you nor fathom you.
You are charged with green semen
like a bridal tree, you are silvered
with the wild primrose,
you are reddened with timber,
blue between the moon of the stones,
clothed in ferruginous mist,
slow as a planet's path.

Pablo Neruda